

This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a minor, industrial permit. The discharge results from the operation of a petroleum fuel storage and distribution center. The effluent limitations and special conditions contained within this permit will maintain the Water Quality Standards of 9 VAC 25-260-00 et seq.

1. Facility Name and Mailing Address: Motiva Enterprises LLC  
Fairfax Distribution Terminal  
3800 Pickett Road  
Fairfax, VA 22031  
SIC Code: 5171  
Facility Location: 3800 Pickett Road  
Fairfax, VA 22031  
County: Fairfax  
Facility Contact Name: Susan Horning  
Telephone Number: 703-550-9510
2. Permit No.: VA0002283  
Current Expiration Date: 15 April 2008  
Other VPDES Permits: Not Applicable  
Other Permits: NVRO 70248 (air)  
E2/E3/E4 Status: Not Applicable
3. Owner Name: Motiva Enterprises LLC  
Owner Contact/Title: Susan Horning / Terminal Manager  
Telephone Number: 703-550-9510
4. Application Complete Date: 16 October 2007  
Permit Drafted By: Douglas Frasier  
Date Drafted: 11 January 2008  
Draft Permit Reviewed By: Alison Thompson  
Date Reviewed: 25 January 2008  
Public Comment Period: Start Date: 12 March 2008  
End Date: 11 April 2008
5. Receiving Waters Information: See **Attachment 1** for the Flow Frequency Determination  
Receiving Stream Name: Crook Branch  
Drainage Area at Outfall: < 1 square mile  
River Mile: 2.1  
Stream Basin: Potomac River  
Subbasin: None  
Section: 07  
Stream Class: III  
Special Standards: b  
Waterbody ID: VAN-A15R  
7Q10 Low Flow: 0.0 MGD  
7Q10 High Flow: 0.0 MGD  
1Q10 Low Flow: 0.0 MGD  
1Q10 High Flow: 0.0 MGD  
Harmonic Mean Flow: 0.0 MGD  
30Q5 Flow: 0.0 MGD  
303(d) Listed: No  
30Q10 Flow: 0.0 MGD  
TMDL Approved: Yes - downstream  
Date TMDL Approved: 31 May 2002
6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:
 

<input checked="" type="checkbox"/> State Water Control Law <input checked="" type="checkbox"/> Clean Water Act <input checked="" type="checkbox"/> VPDES Permit Regulation <input checked="" type="checkbox"/> EPA NPDES Regulation	<input type="checkbox"/> EPA Guidelines <input checked="" type="checkbox"/> Water Quality Standards <input type="checkbox"/> Other
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7. Licensed Operator Requirements: Not Applicable
8. Reliability Class: Not Applicable

**9. Permit Characterization:**

<input checked="" type="checkbox"/> Private	<input type="checkbox"/> Effluent Limited	<input type="checkbox"/> Possible Interstate Effect
<input type="checkbox"/> Federal	<input checked="" type="checkbox"/> Water Quality Limited	<input type="checkbox"/> Compliance Schedule Required
<input type="checkbox"/> State	<input checked="" type="checkbox"/> Toxics Monitoring Program Required	<input type="checkbox"/> Interim Limits in Permit
<input type="checkbox"/> POTW	<input type="checkbox"/> Pretreatment Program Required	<input type="checkbox"/> Interim Limits in Other Document
<input type="checkbox"/> TMDL		

**10. Wastewater Sources and Treatment Description:**

The Motiva Enterprises Fairfax Terminal is a petroleum fuel storage and distribution facility. Fuel products are received via the Colonial Pipeline, stored and distributed by truck to off site retail stations and pipelined to Washington Dulles Airport. The volume of petroleum products distributed in 2006 was 208 million gallons of gasoline, 65.5 million gallons of diesel and 162.5 million gallons of aviation fuel, per the application package.

*Outfall 001*

Stormwater runoff from the fuel loading area and the bulk oil storage area is routed through two parallel Oil/Water separators and then into a 400,000 gallon retention pond. The retention pond discharge is designated as Outfall 001 with a design average flow of 0.058 Million Gallons per Day (MGD) as provided in the application.

Loading Area: The covered truck loading area is bermed with surface drains for spill containment. Any spillage and runoff from this area is routed to a baffled 10,000 gallon relaxer tank, allowing large product flows to slow prior to being pumped to the 2,000 gallon upper O/W separator located south of the loading area.

Reclaim Tank: West of the truck loading area is a 550 gallon aboveground storage tank which receives product from sample testing. Material from the tank is manually pumped back into the storage tank containing the lowest grade product.

Storage Tanks and Berm: The nine main storage tanks are contained within a berm, which is designed to contain 115-125% of the volume of the largest storage tank. Stormwater impounded within the berm collects in a concrete collection sump and is manually pumped out through the lower O/W separator located on the south side of the tanks. From this O/W separator, the water is discharged into the pond and the separated fuel product is hauled offsite by a licensed contractor for disposal/reuse. The bermed tank/storage area does not have a synthetic liner, but does have a compacted earth and gravel bottom. Tank bottom waters are collected in a storage container for offsite contractor disposal. Bottom waters are removed when they reach three inches in the bottom of the storage tank, usually once a year.

Pond: The retention pond is lined with a Griffolyn Type 75 liner and stores rainwater from the containment area around the above ground storage tanks. During rain events, water collects inside the containment area which is manually pumped into the lower O/W separator. The water then flows to the pond, which has a storage capacity of about 400,000 gallons. When additional storage capacity is needed, the discharge valve is manually opened after sampling and the pond is drained approximately half way. The discharge pipe is approximately six inches in diameter.

Upper Separator: Product from the loading rack area and adjacent paved areas is directed to the “relaxing” tank and is then manually pumped to the 2,000 gallon upper Oil/Water separator. Product is collected in a 2,000 gallon holding tank that is pumped and hauled regularly by a contractor, and treated water runs into the main retention pond.

Lower Separator: Storm water from the bermed area is manually pumped to this 2,000 gallon unit. The separated water is discharged into the retention pond and the separated product is skimmed out to an adjacent holding tank for off site disposal. The unit is bermed by a three foot concrete wall and cover and only discharges when the berm sump pump is activated.

Fuel Additives: Near the front of the property, south of the loading area, are the fuel additives. Volumes and types are included in Section 13 of this fact sheet. Most tanks are single walled and all are positioned within a valved concrete containment area. The red dye tank also has an attached containment curtain. The valve is normally left open except when products are being received. Any spill moving beyond this area would be stopped by the main secondary containment dike.

Effluent from Outfall 001 discharges into a concrete culvert, runs into an underground corrugated pipe, runs under Pickett Road and enters Crook Branch. There are two valves between the pond and the culvert and both must be open for a discharge to occur. Both valves are normally kept closed. A Kent Bubbler flow meter was installed to measure flows and to collect composite samples. Discharge cycles are usually around 24 hours but can last up to 72 hours if the pond is at capacity. Since the pond is primarily composed of storm water runoff, the discharge is considered intermittent.

#### *Outfall 002*

There is an extensive groundwater recovery and treatment system in operation under EPA oversight. The groundwater treatment systems consist of phase separation, air stripping, carbon adsorption, greensand filtration and chemical addition (KMnO<sub>4</sub> and gypsum). The discharge of treated groundwater is designated as Outfall 002 with a design average flow of 0.021 MGD as reported in the 2008 reissuance application.

Groundwater Treatment Units: There are three treatment units (TS1, TS2 and TS3) that handle the petroleum contaminated groundwater. The entire system is automated, alarmed and capable of running 24 hours a day. The backwash water is currently discharged to the sanitary sewer. Process control testing is conducted on influent, intermediate and effluent samples, with the data reported to DEQ along with the monthly DMRs. The air strippers are cleaned whenever BTEX reductions are less than 85% or concentrations are greater than 10 mg/L for two consecutive samples.

The sampling point for Outfall 002 is located adjacent to the treatment units in a concrete vault. The discharge from Outfall 002 enters a 4 inch PVC gravity line, eventually converging with the retention pond discharge just below Outfall 001. A Plastifab Weir and flow bubbler system were installed at the vault to facilitate accurate flow measurements and composite sampling when necessary.

#### *Outfall 003*

This outfall has been established for the discharge of hydrostatic tank testing waters. Discharges through this outfall would enter the same corrugated steel pipe downstream from Outfall 001. Prior to discharge, test waters would be analyzed at three points in the tank (top, middle and bottom). This water will not flow through an O/W separator or the retention pond prior to discharge. The only required treatment would be dechlorination since potable water from the Fairfax County Water Authority will be used to conduct the test. If necessary, dechlorination will be accomplished through chemical means at the point of discharge from the tanks. During the last permit cycle, no hydrostatic tank testing was conducted but the permittee would like to maintain this outfall for possible future needs.

See **Attachment 2** for the NPDES Permit Rating Worksheet.

See **Attachment 3** for a facility schematic/diagram.

TABLE 1 Outfall Description				
Outfall Number	Discharge Sources	Treatment	Design Average Flow	Outfall Latitude and Longitude
001	Stormwater Associated with Industrial Activity	See Item 10 above.	0.085 MGD	38° 50' 50.3" N 77° 16' 26.0" W
002	Treated Groundwater	See Item 10 above.	0.021 MGD	38° 50' 50.3" N 77° 16' 26.0" W
003	Hydrostatic Tank Testing Water	See Item 10 above.	Dependent on tank tested	38° 50' 50.3" N 77° 16' 26.0" W
See <b>Attachment 4</b> for topographic map.				

#### 11. Sludge Treatment and Disposal Methods:

The handling and disposal of the sediment and sludge that accumulates in the oil-water separators and the retention pond shall be in accordance with the approved Operation and Maintenance Manual.

**12. Discharges, Intakes, Monitoring Stations and Other Items in Vicinity of Discharge:**

TABLE 2 Facilities and Monitoring Stations		
Permit Number	VPDES permits, ambient monitoring stations, drinking water/industrial intakes	River Mile
VA0001872	Fairfax Terminal Complex – Industrial discharge	0.18
VA0002283	Motiva Enterprises – Fairfax Terminal – Industrial discharge	2.1
1aACO018.48	DEQ Monitoring Station – Accotink Creek at the Route 846 crossing	18.48

**13. Material Storage:**

TABLE 3 Material Storage		
Materials Description	Maximum Volume Stored	Spill/Stormwater Prevention Measures
Ultra-low Sulfur Diesel	1,769,246 gallon AST	Bermed Containment Area
Gasoline	1,770,632 gallon AST	Bermed Containment Area
Gasoline	1,280,909 gallon AST	Bermed Containment Area
Gasoline	1,280,909 gallon AST	Bermed Containment Area
Gasoline	1,370,309 gallon AST	Bermed Containment Area
Gasoline	2,788,447 gallon AST	Bermed Containment Area
Gasoline	1,348,859 gallon AST	Bermed Containment Area
Gasoline	2,743,765 gallon AST	Bermed Containment Area
Ultra-low Sulfur Diesel	2,765,369 gallon AST	Bermed Containment Area
Premium Diesel Additive	1,000 gallon AST	Bermed Containment Area
Red Dye Additive	564 gallon AST	Bermed Containment Area
Generic Gasoline Additive	1,000 gallon AST	Bermed Containment Area
Gasoline Additive	10,000 gallon AST	Bermed Containment Area
#2 Heating Oil	550 gallon AST	Bermed Containment Area
Warehouse Fuel Oil	2,000 gallon AST	Bermed Containment Area
Reclaim Tank	550 gallon AST	Bermed Containment Area

**14. Site Inspection:** Performed by NRO staff on 25 September 2007 (see **Attachment 5**).

**15. Receiving Stream Water Quality and Water Quality Standards:**a) Ambient Water Quality Data

There is no monitoring data for Crook Branch. There are numerous downstream impairments for *E. coli* bacteria and has been noted with an observed effect for benthic macroinvertebrates. A TMDL was approved by the EPA on 31 May 2002 for the *E. coli* bacteria impairments on Accotink Creek. The receiving stream was not included in the TMDL since it was not listed as impaired; however, all upstream bacteria sources were considered. This facility does not discharge the pollutant of concern.

b) Receiving Stream Water Quality Criteria

Part IX of 9 VAC 25-260 (360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream Crook Branch is located within Section 07 of the Potomac River Basin and is classified as Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C and maintain a pH of 6.0-9.0 standard units (S.U.).

**Attachment 6a** and **6b** details other water quality criteria applicable to the receiving stream for Outfall 001 and Outfall 002, respectively.

Ammonia:

This facility discharges potentially contaminated stormwater from surface runoff. The operation does not use or store ammonia products on site. Ammonia is not expected to be present in the discharge; therefore, ammonia criterion is not warranted.

Metals Criteria:

The 7Q10 of the receiving stream is zero and no ambient data is available. It is staff's best professional judgement that a default hardness value of 50 mg/L for Outfall 001 and the average effluent value of 115 mg/L for Outfall 002 (**Attachment 7**) can be used to determine the metals criteria. See **Attachment 6a** and **6b** for the hardness-dependent metals criteria for each respective outfall.

c) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9 VAC 25-260-360, 370 and 380) designates the river basins, sections, classes and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Crook Branch, is located within Section 07 of the Potomac River Basin. This section has been designated with a special standard of 'b'.

Special Standard 'b' (Potomac Embayment Standards) established effluent standards for all sewage plants discharging into Potomac River embayments and for expansions of existing plants discharging into non-tidal tributaries of these embayments. 9 VAC 25-415, Policy for the Potomac Embayments controls point source discharges of conventional pollutants into the Virginia embayment waters of the Potomac River, and their tributaries, from the fall line at Chain Bridge in Arlington County to the Route 301 bridge in King George County. The regulation sets effluent limits for BOD<sub>5</sub>, total suspended solids, phosphorus and ammonia to protect the water quality of these high profile waterbodies.

The Potomac Embayment Standards are not applicable since industrial discharges, where BOD<sub>5</sub> and nutrients are not primary pollutants of concern, were explicitly exempt (9 VAC 25-415-30.D.).

d) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched for records to determine if there are threatened or endangered species in the vicinity of the discharge. No threatened or endangered species were identified within a 2 mile radius of the discharge.

**16. Antidegradation (9 VAC 25-260-30):**

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 based on the fact that the critical flows 7Q10 and 1Q10 have been determined to be zero. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

**17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:**

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLAs) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLAs are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency and statistical characteristics of the effluent data.

**a) Effluent Screening**

Effluent data obtained from the permit application and Discharge Monitoring Reports (DMRs) have been reviewed and it was determined that the permittee used higher quantification levels (QLs) than specified in the permit for the analyses of Copper and Zinc.

**b) Mixing Zones and Wasteload Allocations (WLAs)**

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

Where: WLA = Wasteload allocation  
 $C_o$  = In-stream water quality criteria  
 $Q_e$  = Design flow  
 $Q_s$  = Critical receiving stream flow  
 (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; harmonic mean for carcinogen-human health criteria; 30Q10 for ammonia criteria; and 30Q5 for non-carcinogen human health criteria)  
 $f$  = Decimal fraction of critical flow  
 $C_s$  = Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001, Outfall 002 and Outfall 003 is considered to have a 7Q10 and 1Q10 of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the  $C_o$ .

**c) Effluent Limitations Toxic Pollutants – Outfall 001, Outfall 002 and Outfall 003**

9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation 9 VAC 25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

**1) Total Residual Chlorine:**

Given that the facility will be utilizing potable water during any hydrostatic testing, staff used the applicable water quality criteria to determine the chlorine limitation. The facility will have an instantaneous maximum limit of 16 µg/L during a discharge event for Outfall 003. See **Attachment 8** for the limitation calculations.

## 2) Metals/Organics:

*Outfall 001:* DEQ's Guidance recommends that chemical specific water quality-based limits not be placed on stormwater Outfalls at this time because the methodology for developing limits and the proper method of sampling is still under review by EPA. EPA produced a document dated August 1, 1996, entitled "Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits". This document indicated that an interim approach to limiting storm water could be through the use of best management practices rather than numerical limits.

The duration of a discharge is not expected to exceed four consecutive days. Therefore, only the acute wasteload allocation (WLAa) needs to be addressed. Water Quality Criteria for human health (and chronic toxicity to a lesser degree) are based upon long term, continuous exposure to pollutants from effluents and storm water discharges are short term and intermittent. Therefore, it is believed that the human health and chronic criteria are not applicable to storm water receiving discharges. If it is raining a sufficient amount to generate a discharge of storm water, it is assumed that the receiving stream flow will be greater than the critical flow due to storm water runoff within the stream's drainage area. Therefore, recognition of the dilution caused by the rainfall, the Waste Load Allocations (WLAs) were calculated by multiplying the acute Water Quality Criteria by two. The factor of two is derived from the safety factor of two used to convert the acute criteria from the final acute value. Based on a 50 mg/L hardness and a calculated Acute Criteria of 65 µg/L for zinc and 7.0 µg/L for copper (**Attachment 6a**), the 2x Acute Criteria Monitoring End Point is 130 µg/L for Zinc and 14 µg/L for Copper.

It is proposed that the facility continue monitoring for dissolved Zinc and dissolved Copper annually with the results reported on the DMR for the month in which the samples were collected. The facility shall utilize Best Management Practices as part of the Stormwater Pollution Prevention Plan to ensure that there is no contamination of storm water runoff that impact State Waters from metals at the facility. The results will be re-evaluated during the next permit reissuance.

*Outfall 002:* Hardness data was collected during the last permit cycle and it was determined that the average effluent hardness is 115 mg/L compared with the default value of 50 mg/L used during the 2003 reissuance. The calculated WLA for Zinc is provided in **Attachment 6b**. The subsequent limit calculation is provided in **Attachment 9**, indicating that no limit is necessary. However, due to antibacksliding the limit of 53 µg/L will remain in this reissuance.

It is proposed that the facility continue monitoring for Zinc once per calendar quarter. The permittee, after completion of eight (8) consecutive sampling events below the permitted level, may request the monitoring frequency be reduced to semi-annually.

## 3) BTEX and Naphthalene:

The water quality-based effluent limits in this permit are established pursuant to the VPDES Permit Regulation, 9 VAC 25-31-220 D, and the policy stated in the Virginia Water Quality Standards, 9 VAC 25-260-140 B. The limits are set at what is believed to be safe concentrations for the protection of beneficial uses including the growth and propagation of aquatic organisms inhabiting surface waters that receive the discharge. The limits assume zero dilution of the effluent by the receiving waters so that they can be applied without regard to effluent or receiving water flows. They are based on information provided in EPA criteria documents for priority pollutants, EPA toxicity databases and conservative application factors.

The previous permit had monthly average limitations for BTEX, Naphthalene and Zinc for Outfall 002. It is proposed that these limits be carried forward as maximum limits in keeping with the General VPDES Permit for Discharges from Petroleum Contaminated Sites, 9 VAC 25-120. There will be no monthly average limitations for Outfall 002.

See **Attachment 10** for further explanation on the limitation development.

## 4) Toxics Management Plan (TMP):

*Outfall 001:* The permittee is required to conduct annual acute toxicity tests of the final effluent. Upon review of the data, the facility has reported  $TU_a = 1$  since 2003. It is proposed that the current sampling schedule be carried forward with this reissuance.

*Outfall 002:* The facility has a quarterly WET Limit of 1.8  $TU_c$ . The limit was exceeded in October 2006 and March 2007. Corrective actions have been undertaken by the permittee. It is proposed that the limit and the sampling schedule be carried forward with this reissuance.

See **Attachment 11** for the TMP summaries.

d) Effluent Limitations and Monitoring – Outfall 001, Outfall 002 and Outfall 003  
Conventional and Non-Conventional Pollutants

pH limitations are set at the water quality criteria.

Hardness limits are set at the water quality criteria.

e) Effluent Limitations and Monitoring Summary

The effluent limitations are presented in the following table. Limits were established for Flow, Total Petroleum Hydrocarbons, Dissolved Oxygen, Total Residual Chlorine, BTEX, Naphthalene, Copper, Zinc and Hardness.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

**18. Antibacksliding:**

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

**19a. Effluent Limitations/Monitoring Requirements:**

**Outfall 001 – Effluent from the Stormwater Retention Pond.**

Maximum Flow of this Industrial Facility is 0.085 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency</u>	<u>Sample Type</u>
Flow (MGD)	N/A	NL	N/A	N/A	NL	1/M	EST
pH	3	N/A	N/A	6.0 S.U.	9.0 S.U.	1/M	Grab
Total Petroleum Hydrocarbons*	2	N/A	N/A	N/A	15 mg/L	1/M	Grab
Acute Whole Effluent Toxicity	3	N/A	N/A	N/A	NL	1/Y	Grab
Copper, Dissolved (µg/L)	3	N/A	N/A	N/A	NL	1/Y	Grab
Zinc, Dissolved (µg/L)	3	N/A	N/A	N/A	NL	1/Y	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgement
3. Water Quality Standards

*MGD* = Million gallons per day.

*N/A* = Not applicable.

*NL* = No limit; monitor and report.

*S.U.* = Standard units.

*1/M* = Once every month.

*1/Y* = Once every 12 months.

EST = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

\*Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015B (1996) for diesel range organics, or by EPA SW-846 Method 8270C (1998). If Method 8270C is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

**19b. Effluent Limitations/Monitoring Requirements:****Outfall 002 – Effluent from Treated Groundwater Remediation.**

Maximum Flow of this Industrial Facility is 0.021 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency</u>	<u>Sample Type</u>
Flow (MGD)	N/A	NL	N/A	N/A	NL	1/3M	EST
pH	3	N/A	N/A	6.0 S.U.	9.0 S.U.	1/3M	Grab
Total Petroleum Hydrocarbons*	2	N/A	N/A	N/A	10 mg/L	1/3M	Grab
Benzene	4	N/A	N/A	N/A	50 µg/L	1/3M	Grab
Ethylbenzene	4	N/A	N/A	N/A	320 µg/L	1/3M	Grab
Toluene	4	N/A	N/A	N/A	175 µg/L	1/3M	Grab
Total Xylenes	4	N/A	N/A	N/A	33 µg/L	1/3M	Grab
Naphthalene	4	N/A	N/A	N/A	10 µg/L	1/3M	Grab
Zinc, Total Recoverable	3	N/A	N/A	N/A	53 µg/L	1/3M	Grab
Hardness	3	N/A	N/A	50 mg/L	N/A	1/3M	Grab
Chronic Whole Effluent Toxicity	3	N/A	N/A	N/A	1.8 TUc	1/3M	24 HC

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgement
3. Water Quality Standards
4. Technology Based Limits

MGD = Million gallons per day.

N/A = Not applicable.

NL = No limit; monitor and report.

S.U. = Standard units.

1/3M = Once every calendar quarter.

24 HC = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 24-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of twenty-four (24) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum twenty-four (24) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by 10% or more during the monitored discharge.

EST = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

\*Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015B (1996) for diesel range organics, or by EPA SW-846 Method 8270C (1998). If Method 8270C is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

The quarterly monitoring periods shall be January through March, April through June, July through September and October through December. The DMR shall be submitted no later than the 10<sup>th</sup> day of the month following the monitoring period.

**19c. Effluent Limitations/Monitoring Requirements:****Outfall 003 – Hydrostatic Test Waters**

Maximum Flow of this Industrial Facility has not yet been determined.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	N/A	NL	N/A	N/A	NL	CNTG	EST
pH	3	N/A	N/A	6.0 S.U.	9.0 S.U.	CNTG	Grab
Total Petroleum Hydrocarbons*	2	N/A	N/A	N/A	15 mg/L	CNTG	Grab
Benzene	4	N/A	N/A	N/A	53 µg/L	CNTG	Grab
Ethylbenzene	4	N/A	N/A	N/A	320 µg/L	CNTG	Grab
Toluene	4	N/A	N/A	N/A	175 µg/L	CNTG	Grab
Total Xylenes	4	N/A	N/A	N/A	33 µg/L	CNTG	Grab
Naphthalene**	4	N/A	N/A	N/A	10 µg/L	CNTG	Grab
Chlorine, Total Residual	3	N/A	N/A	N/A	16 µg/L	CNTG	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgement
3. Water Quality Standards
4. Technology Based Limits

*MGD* = Million gallons per day.*N/A* = Not applicable.*NL* = No limit; monitor and report.*S.U.* = Standard units.

CNTG = Contingent. Two (2) samples per hydrostatic tank test. The first sample shall be collected during the initial discharge or be a representative sample collected and analyzed prior to the discharge. The second sample shall be collected during the discharge of the final 20% by volume or the last two feet of hydrostatic tank test water. Samples shall be collected from the discharge point at the appropriate above ground storage tank.

EST = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

\*Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015B (1996) for diesel range organics, or by EPA SW-846 Method 8270C (1998). If Method 8270C is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

\*\* Naphthalene monitoring required only on tanks containing aviation gasoline, jet fuel or diesel.

**20. Other Permit Requirements:**

- a) Part I.B. of the permit contains quantification levels and compliance reporting instructions.

9 VAC 25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

- b) Permit Section Part I.C., details the requirements for Toxics Management Program.

The VPDES Permit Regulation at 9 VAC 25-31-210 requires monitoring and 9 VAC 25-31-220.I, requires limitations in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act. A TMP is imposed for municipal facilities with a design rate >1.0 MGD, with an approved pretreatment program or required to develop a pretreatment program, or those determined by the Board based on effluent variability, compliance history, IWC and receiving stream characteristics.

- c) Permit Section Part I.D. details the requirements of a Storm Water Management Plan.

9 VAC 25-31-10 defines discharges of storm water from municipal treatment plants with design flow of 1.0 MGD or more, or plants with approved pretreatment programs, as discharges of storm water associated with industrial activity. 9 VAC 25-31-120 requires a permit for these discharges. The pollution Prevention Plan requirements are derived from the VPDES general permit for discharges of storm water associated with industrial activity, 9 VAC 25-151-10 et seq.

**21. Other Special Conditions:**

- a) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9 VAC 25-31-190.E. Before or on 15 July 2008, the permittee shall submit for approval an Operations and Maintenance (O&M) Manual or a statement confirming the accuracy and completeness of the current O&M Manual to the Department of Environmental Quality, Northern Regional Office (DEQ-NRO). Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.
- b) Notification Levels. The permittee shall notify the Department as soon as they know or have reason to believe:
- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
    - (1) One hundred micrograms per liter;
    - (2) Two hundred micrograms per liter for acrolein and acrylonitrile; five hundred micrograms per liter for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter for antimony;
    - (3) Five times the maximum concentration value reported for that pollutant in the permit application; or
    - (4) The level established by the Board.
  - b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
    - (1) Five hundred micrograms per liter;
    - (2) One milligram per liter for antimony;
    - (3) Ten times the maximum concentration value reported for that pollutant in the permit application; or
    - (4) The level established by the Board.
- c) Oil Storage Ground Water Monitoring Reopener. As this facility currently manages ground water in accordance with 9 VAC 25-90-10 et seq., Oil Discharge Contingency Plans and Administration Fees for Approval, this permit does not presently impose ground water monitoring requirements. However, this permit may be modified or alternately revoked and reissued to include ground water monitoring not required by the ODCP regulation.
- d) Materials Handling/Storage. 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia §62.1-44.16 and §62.1-44.17 authorize the Board to regulate the discharge of industrial waste or other waste.
- e) Hydrostatic Testing. The permittee shall obtain approval from the DEQ Northern Regional Office forty-eight (48) hours in advance of any discharge resulting from hydrostatic testing. The conditions of approval will be contingent on the volume and duration of the proposed discharge, and the nature of the residual product.
- f) No Discharge of Detergents, Surfactants, or Solvents to the Oil/Water Separators. This special condition is necessary to ensure that the oil/water separators' performance is not impacted by compounds designed to emulsify oil. Detergents, surfactants and some other solvents will prohibit oil recovery by physical means.
- g) Zinc Monitoring Reduction for Outfall 002. The permittee may request a reduction in monitoring frequency for Zinc at Outfall 002 from once per calendar quarter to semi-annual upon completion of eight (8) consecutive sampling events with no exceedences of the limitation in Part I.A. of the permit. If further sampling indicates levels above the permitted level, quarterly monitoring may be re-instated.

- 22. Permit Section Part II.** Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

**23. Changes to the Permit from the Previously Issued Permit:**

## a) Special Conditions:

- The Storm Water Reopener condition was removed with this reissuance.
- Monitoring Reduction condition for Zinc at Outfall 002 was added.

## b) Monitoring and Effluent Limitations:

- The limits for Total Xylene and Naphthalene were reduced to 33 µg/L and 10 µg/L, respectively in keeping with 9 VAC 25-120, General VPDES Permit for Discharges from Petroleum Contaminated Sites.
- The Monthly Average limitations for Outfall 002 were carried forward as maximum limits in keeping with 9 VAC 25-120, General VPDES Permit for Discharges from Petroleum Contaminated Sites.
- The Sample Type for Zinc and Hardness at Outfall 002 were changed from 4 hour composites to grab samples as recommended in the VPDES Permit Manual.

**24. Variances/Alternate Limits or Conditions:** None**25. Public Notice Information:**

First Public Notice Date: 11 March 2008

Second Public Notice Date: 18 March 2008

Public Notice Information is required by 9 VAC 25-31-280 B. All pertinent information is on file and may be inspected and copied by contacting the: Northern DEQ Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3873, [ddfrasier@deq.virginia.gov](mailto:ddfrasier@deq.virginia.gov). See **Attachment 12** for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

**26. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):**

There are numerous downstream impairments for *E. coli* bacteria. A TMDL was approved by the EPA on 31 May 2002 for the *E. coli* bacteria impairments on Accotink Creek. The receiving stream was not included in the TMDL since it was not listed as impaired; however, all upstream bacteria sources were considered. This facility does not discharge the pollutant of concern.

TMDL Reopener: This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL that may be developed and approved for the receiving stream.

**27. Additional Comments:**

Previous Board Action(s): None.

Staff Comments: None.

Public Comment: No comments were received during the public notice.

EPA Checklist: The checklist can be found in **Attachment 13**.

## Fact Sheet Attachments – Table of Contents

### Motiva Enterprises LLC – Fairfax Terminal VA0002283 2008 Reissuance

Attachment 1	Flow Frequency Determination
Attachment 2	NPDES Permit Rating Worksheet
Attachment 3	Facility Schematic/Diagram
Attachment 4	Topographic Map
Attachment 5	Site Inspection Report
Attachment 6a	Wasteload Allocation Analysis for Outfall 001
Attachment 6b	Wasteload Allocation Analysis for Outfall 002
Attachment 7	Hardness Data for Outfall 002
Attachment 8	Chlorine Limitation Calculation for Outfall 003
Attachment 9	Zinc Limitation Calculation for Outfall 002
Attachment 10	BTEX and Naphthalene Limitation Development
Attachment 11	TMP Summaries for Outfall 001 and Outfall 002
Attachment 12	Public Notice
Attachment 13	EPA Checklist

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION  
Water Quality Assessments and Planning  
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Flow Frequency Determination  
Star Enterprise, Fairfax - #VA0002283

RECEIVED

AUG 25 1997

TO: James C. Engbert, NRO

FROM: Paul E. Herman, P.E., WQAP *Paul*

DATE: August 18, 1997

Northern VA. Region  
Dept. of Env. Quality

COPIES: Ron Gregory, Charles Martin, File

The Star Enterprise - Fairfax Terminal discharges to an unnamed tributary of the Crook Branch in Fairfax, VA. Flow frequencies are required at this site for use by the permit writer in developing effluent limitations for the VPDES permit.

The values at the discharge point were determined by inspection of the USGS Fairfax Quadrangle topographical map which shows the receiving stream as being a dry ravine at the discharge point. The dry ravine drains to an intermittent stream. The flow frequencies for dry ravines and intermittent streams are 0.0 cfs for the 1Q10, 7Q10, 30Q5, high flow 1Q10, high flow 7Q10, and the harmonic mean.

If you have any questions concerning this analysis, please let me know.

**NPDES PERMIT RATING WORK SHEET**

<input checked="" type="checkbox"/>	Regular Addition
<input type="checkbox"/>	Discretionary Addition
<input type="checkbox"/>	Score change, but no status Change
<input type="checkbox"/>	Deletion

VPDES NO. : VA0002283Facility Name: Motiva Enterprises LLCCity / County: Fairfax/Fairfax CountyReceiving Water: Crook Branch

Reach Number: \_\_\_\_\_

Is this facility a steam electric power plant (sic =4911) with one or more of the following characteristics?

1. Power output 500 MW or greater (not using a cooling pond/lake)
2. A nuclear power Plant
3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rater

Is this permit for a municipal separate storm sewer serving a population greater than 100,000?

- ☐ YES; score is 700 (stop here)
- ☒ NO; (continue)

☐ Yes; score is 600 (stop here) ☒ NO; (continue)

**FACTOR 1: Toxic Pollutant Potential**

PCS SIC Code: \_\_\_\_\_ Primary Sic Code: 5171 Other Sic Codes: \_\_\_\_\_

Industrial Subcategory Code: 000 (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A. Be sure to use the TOTAL toxicity potential column and check one)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input checked="" type="checkbox"/> No process waste streams	0	0	<input type="checkbox"/> 3.	3	15	<input type="checkbox"/> 7.	7	35
<input type="checkbox"/> 1.	1	5	<input type="checkbox"/> 4.	4	20	<input checked="" type="checkbox"/> 8.	8	40
<input type="checkbox"/> 2.	2	10	<input type="checkbox"/> 5.	5	25	<input type="checkbox"/> 9.	9	45
			<input type="checkbox"/> 6.	6	30	<input type="checkbox"/> 10.	10	50

Code Number Checked: 8**Total Points Factor 1:** 40**FACTOR 2: Flow/Stream Flow Volume** (Complete either Section A or Section B; check only one)

## Section A – Wastewater Flow Only considered

Wastewater Type (see Instructions)	Code	Points
Type I: Flow < 5 MGD	<input type="checkbox"/> 11	0
Flow 5 to 10 MGD	<input type="checkbox"/> 12	10
Flow > 10 to 50 MGD	<input type="checkbox"/> 13	20
Flow > 50 MGD	<input type="checkbox"/> 14	30
Type II: Flow < 1 MGD	<input checked="" type="checkbox"/> 21	10
Flow 1 to 5 MGD	<input type="checkbox"/> 22	20
Flow > 5 to 10 MGD	<input type="checkbox"/> 23	30
Flow > 10 MGD	<input type="checkbox"/> 24	50
Type III: Flow < 1 MGD	<input type="checkbox"/> 31	0
Flow 1 to 5 MGD	<input type="checkbox"/> 32	10
Flow > 5 to 10 MGD	<input type="checkbox"/> 33	20
Flow > 10 MGD	<input type="checkbox"/> 34	30

## Section B – Wastewater and Stream Flow Considered

Wastewater Type (see Instructions)	Percent of Instream Wastewater Concentration at Receiving Stream Low Flow	Code	Points
Type I/III:	< 10 %	<input type="checkbox"/> 41	0
	10 % to < 50 %	<input type="checkbox"/> 42	10
	> 50%	<input type="checkbox"/> 43	20
Type II:	< 10 %	<input type="checkbox"/> 51	0
	10 % to < 50 %	<input type="checkbox"/> 52	20
	> 50 %	<input type="checkbox"/> 53	30

Code Checked from Section A or B: 21**Total Points Factor 2:** 10

## NPDES PERMIT RATING WORK SHEET

**FACTOR 3: Conventional Pollutants**

(only when limited by the permit)

A. Oxygen Demanding Pollutants: (check one) ☐ BOD ☐ COD ☐ Other: \_\_\_\_\_

Permit Limits: (check one)

	Code	Points
<input type="checkbox"/> < 100 lbs/day	1	0
<input type="checkbox"/> 100 to 1000 lbs/day	2	5
<input type="checkbox"/> > 1000 to 3000 lbs/day	3	15
<input type="checkbox"/> > 3000 lbs/day	4	20

Code Number Checked: N/A**Points Scored:** 0

B. Total Suspended Solids (TSS)

Permit Limits: (check one)

	Code	Points
<input type="checkbox"/> < 100 lbs/day	1	0
<input type="checkbox"/> 100 to 1000 lbs/day	2	5
<input type="checkbox"/> > 1000 to 5000 lbs/day	3	15
<input type="checkbox"/> > 5000 lbs/day	4	20

Code Number Checked: N/A**Points Scored:** 0C. Nitrogen Pollutants: (check one) ☐ Ammonia ☐ Other: \_\_\_\_\_

Permit Limits: (check one)

	Code	Points
<input type="checkbox"/> < 300 lbs/day	1	0
<input type="checkbox"/> 300 to 1000 lbs/day	2	5
<input type="checkbox"/> > 1000 to 3000 lbs/day	3	15
<input type="checkbox"/> > 3000 lbs/day	4	20

Code Number Checked: N/A**Points Scored:** 0**Total Points Factor 3:** 0**FACTOR 4: Public Health Impact**

Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this include any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above reference supply.

☐ YES; (If yes, check toxicity potential number below)☒ NO; (If no, go to Factor 5)

Determine the *Human Health* potential from Appendix A. Use the same SIC doe and subcategory reference as in Factor 1. (Be sure to use the *Human Health* toxicity group column – check one below)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input type="checkbox"/> No process waste streams	0	0	<input type="checkbox"/> 3.	3	0	<input type="checkbox"/> 7.	7	15
<input type="checkbox"/> 1.	1	0	<input type="checkbox"/> 4.	4	0	<input type="checkbox"/> 8.	8	20
<input type="checkbox"/> 2.	2	0	<input type="checkbox"/> 5.	5	5	<input type="checkbox"/> 9.	9	25
			<input type="checkbox"/> 6.	6	10	<input type="checkbox"/> 10.	10	30

Code Number Checked: N/A**Total Points Factor 4:** 0

## NPDES PERMIT RATING WORK SHEET

**FACTOR 5: Water Quality Factors**

- A. *Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-base federal effluent guidelines, or technology-base state effluent guidelines), or has a wasteload allocation been to the discharge*

	Code	Points
<input checked="" type="checkbox"/> YES	1	10
<input type="checkbox"/> NO	2	0

- B. *Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?*

	Code	Points
<input checked="" type="checkbox"/> YES	1	0
<input type="checkbox"/> NO	2	5

- C. *Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?*

	Code	Points
<input checked="" type="checkbox"/> YES	1	10
<input type="checkbox"/> NO	2	0

Code Number Checked: A 1 B 1 C 2  
**Points Factor 5:** A 10 + B 0 + C 10 = 20

**FACTOR 6: Proximity to Near Coastal Waters**

- A. Base Score: Enter flow code here (from factor 2) 21

Check appropriate facility HPRI code (from PCS):

HPRI#	Code	HPRI Score
<input type="checkbox"/> 1	1	20
<input type="checkbox"/> 2	2	0
<input type="checkbox"/> 3	3	30
<input checked="" type="checkbox"/> 4	4	0
<input type="checkbox"/> 5	5	20

Enter the multiplication factor that corresponds to the flow code: \_\_\_\_\_

Flow Code	Multiplication Factor
11, 31, or 41	0.00
12, 32, or 42	0.05
13, 33, or 43	0.10
14 or 34	0.15
21 or 51	0.10
22 or 52	0.30
23 or 53	0.60
24	1.00

HPRI code checked : 4

Base Score (HPRI Score): 0 X (Multiplication Factor) 0.10 = 0

- B. Additional Points – NEP Program

For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?

Code	Points
<input type="checkbox"/> 1	10
<input checked="" type="checkbox"/> 2	0

- C. Additional Points – Great Lakes Area of Concern

For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 area's of concern (see instructions)?

Code	Points
<input type="checkbox"/> 1	10
<input checked="" type="checkbox"/> 2	0

Code Number Checked: A 4 B 2 C 2  
**Points Factor 6:** A 0 + B 0 + C 0 = 0

## NPDES PERMIT RATING WORK SHEET

## SCORE SUMMARY

<u>Factor</u>	<u>Description</u>	<u>Total Points</u>
1	Toxic Pollutant Potential	40
2	Flows / Streamflow Volume	10
3	Conventional Pollutants	0
4	Public Health Impacts	0
5	Water Quality Factors	20
6	Proximity to Near Coastal Waters	0
TOTAL (Factors 1 through 6)		<b>70</b>

S1. Is the total score equal to or greater than 80 ☐ YES; (Facility is a Major) ☒ NO

S2. If the answer to the above questions is no, would you like this facility to be discretionary major?

☒ NO

☐ YES; (Add 500 points to the above score and provide reason below:

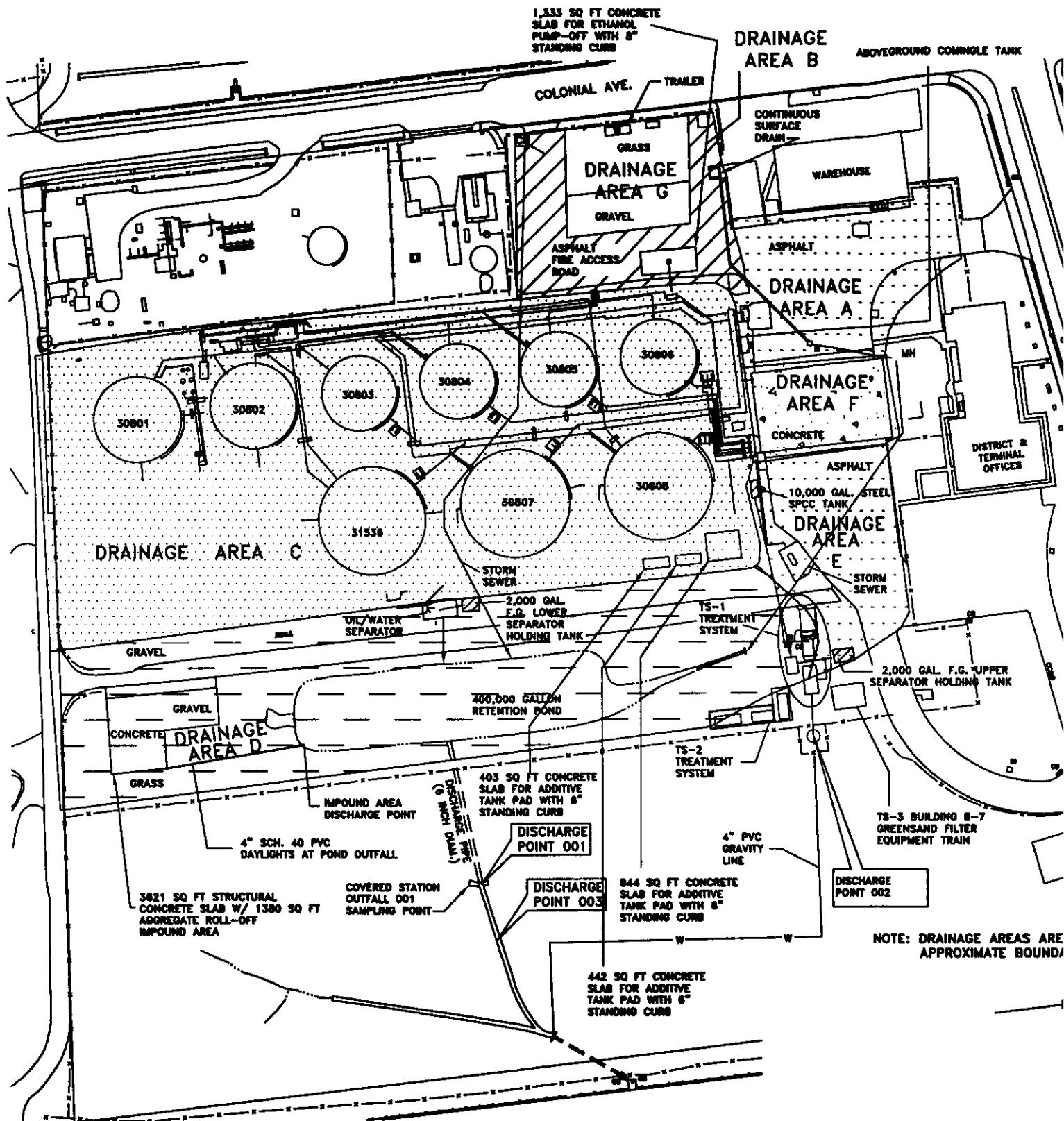
Reason: \_\_\_\_\_

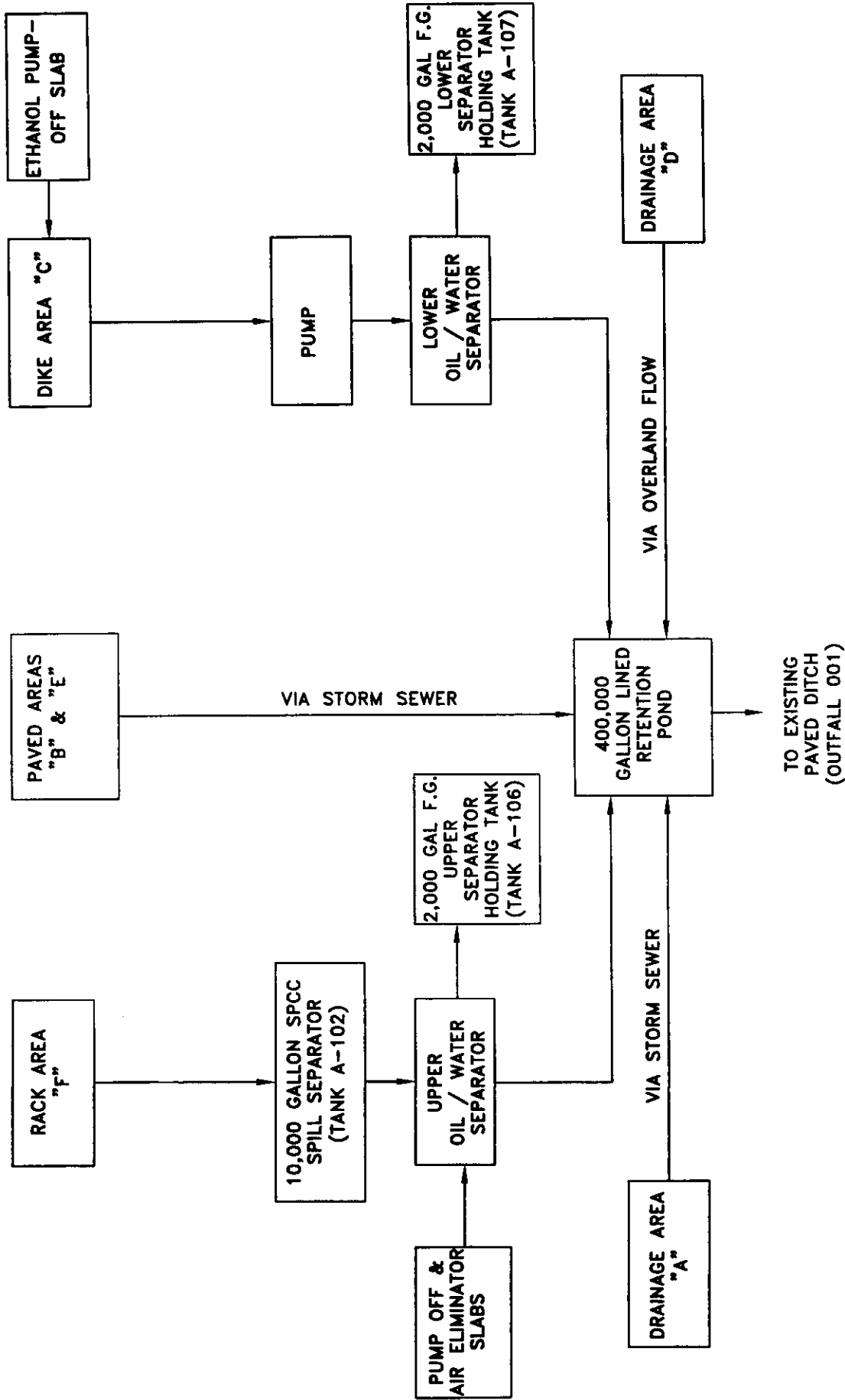
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NEW SCORE : 70

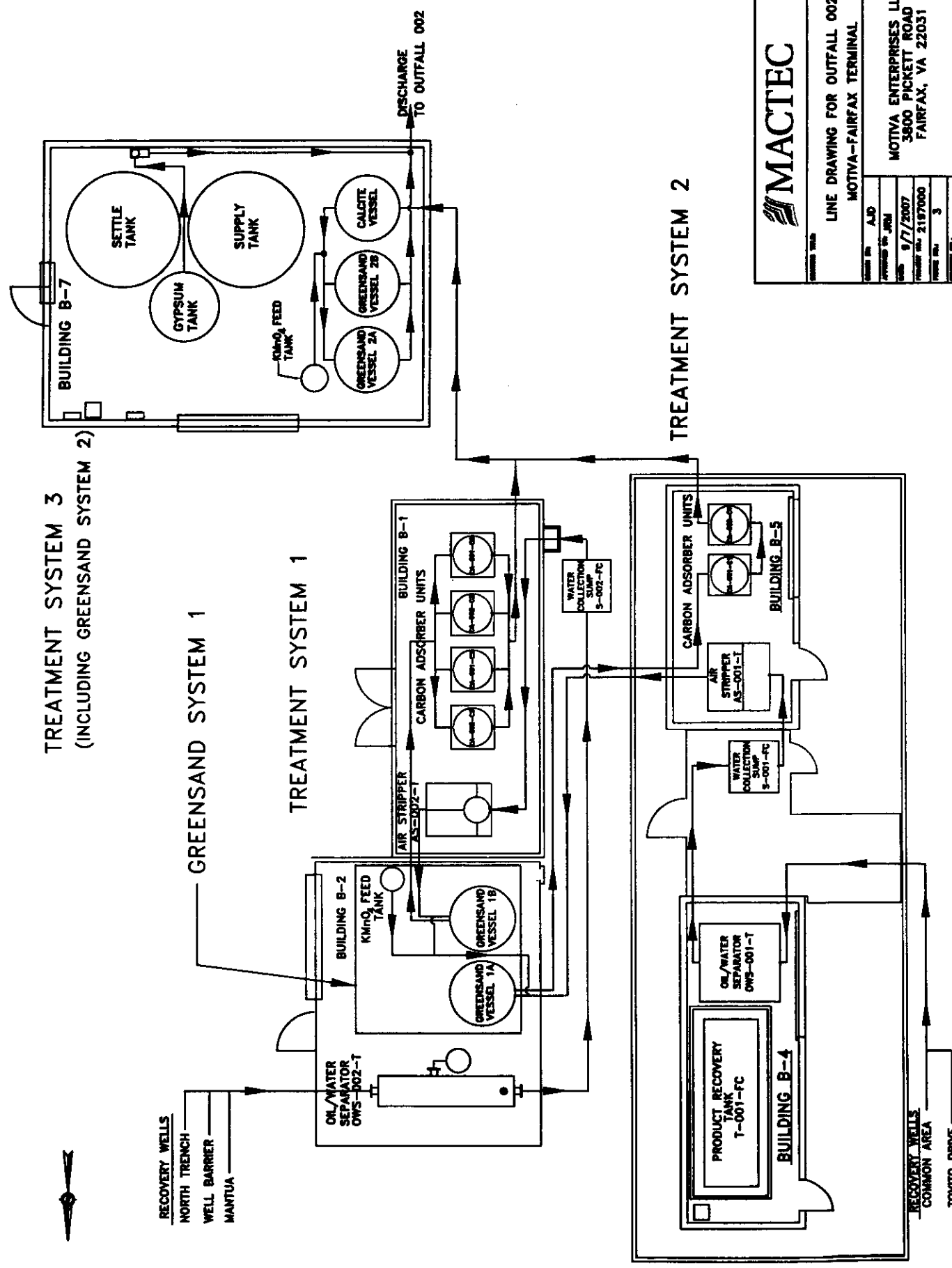
OLD SCORE : 70

Permit Reviewer's Name : Douglas Frasier  
Phone Number: (703) 583-3873  
Date: 7 January 2008





<b>MACTEC</b> 21740 BEAUMEADE CIRCLE SUITE 150 ARLINGTON, VA 22207	DATE 9/11/07	STORMWATER MANAGEMENT SYSTEM DIAGRAM OUTFALL 001		DRAWN BY: AJD
	PROJECT NO. 2197000	MOTIVA ENTERPRISES 3800 PICKETT ROAD FAIRFAX, VA		APPROVED BY: JRM
CAD FILE DRAIN		FIGURE NO. 2		



LINE DRAWING FOR OUTFALL 002  
MOTIVA-FAIRFAX TERMINAL

DESIGNED BY	AJD
APPROVED BY	JRM
DATE	9/7/2007
PROJECT NO.	2197000
FIGURE NO.	3

MOTIVA ENTERPRISES LLC  
3800 PICKETT ROAD  
FAIRFAX, VA 22031

HYDROSTATIC  
TESTING WATER  
FROM  
ABOVEGROUND  
STORAGE TANK

VIA TEMPORARY ABOVEGROUND FIRE HOSE

TO EXISTING  
PAVED DITCH  
(OUTFALL 003)

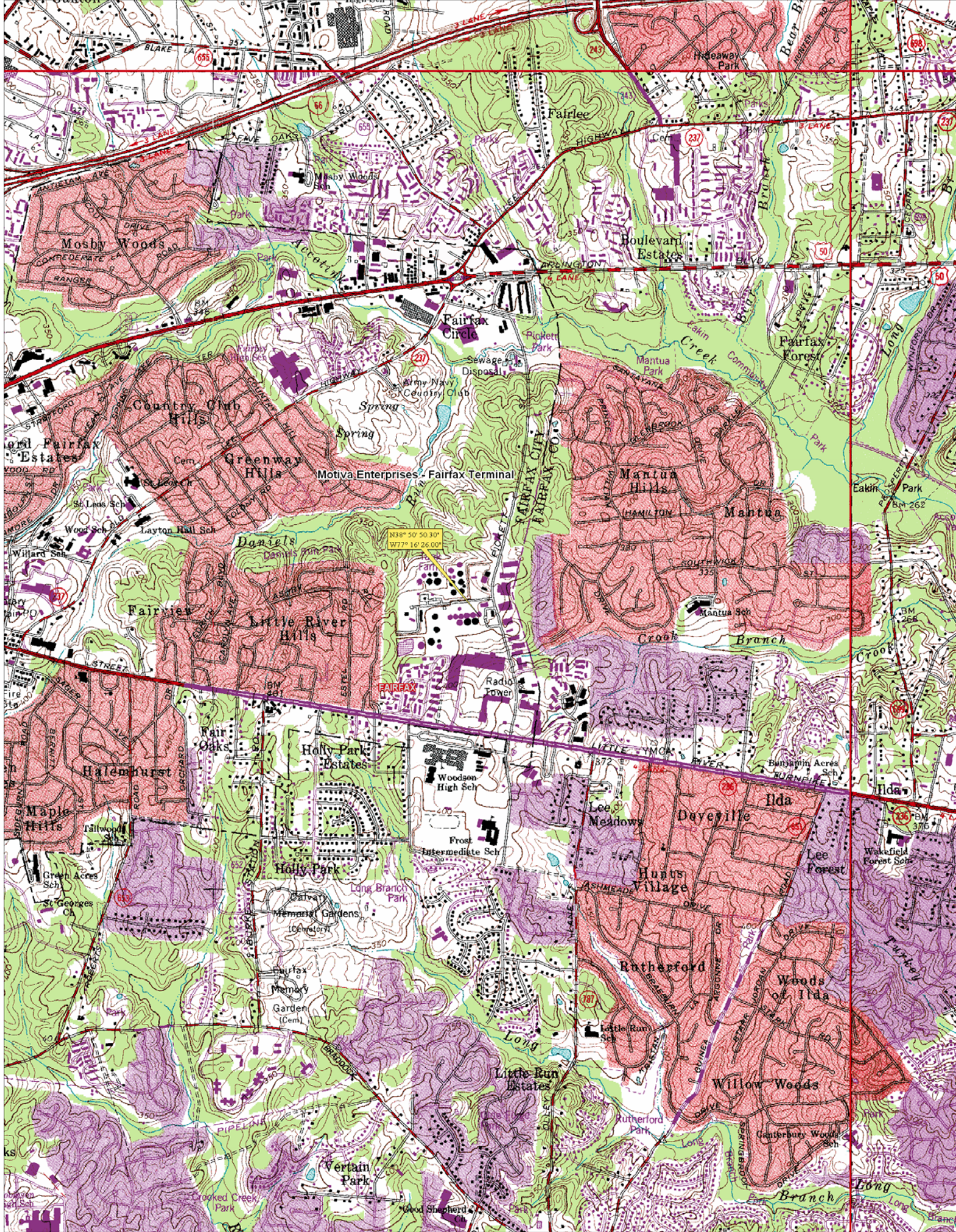


ISSUED 003

LINE DRAWING FOR OUTFALL 003  
MOTIVA-FAIRFAX TERMINAL

DESIGNED BY	AJD
APPROVED BY	JRM
DATE	9/7/2007
PROJECT NO.	2197000
FIGURE NO.	4

MOTIVA ENTERPRISES LLC  
3900 PICKETT ROAD  
FAIRFAX, VA 22031





# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

L. Preston Bryant, Jr.  
Secretary of Natural Resources

NORTHERN VIRGINIA REGIONAL OFFICE  
13901 Crown Court, Woodbridge, Virginia 22193  
(703) 583-3800 Fax (703) 583-3801  
[www.deq.virginia.gov](http://www.deq.virginia.gov)

David K. Paylor  
Director

Jeffery A. Steele  
Regional Director

October 2, 2007

Ms. Susan Horning  
Terminal Manager  
Motiva Enterprises LLC  
8206 Terminal Road  
Lorton, VA 22079

**Re: Motiva Enterprises Fairfax Terminal Inspection, Permit VA0002283**

Dear Ms. Horning:

Enclosed are copies of the technical and laboratory inspection reports generated from observations made while performing a Facility Technical Inspection at the Motiva - Fairfax Terminal facility on September 25, 2007. The water compliance staff would like to thank your staff for their time and assistance during the inspection.

Summaries for both the technical and laboratory inspections are enclosed. There were No Deficiencies discovered for either the laboratory or technical inspections. No response is required for this report. If you choose to respond, your response may be sent either via the US Postal Service or electronically, via E-mail. If you choose to send your response electronically, we recommend sending it as an Acrobat PDF or in a Word-compatible, write-protected format. Additional inspections may be conducted to confirm the facility is in compliance with permit requirements.

If you have any questions or comments concerning this report, please feel free to contact me at the Northern Virginia Regional Office at (703) 583-3833 or by E-mail at [twnelson@deq.virginia.gov](mailto:twnelson@deq.virginia.gov).

Sincerely,

  
Terry Nelson  
Environmental Specialist II

cc: Permits / DMR File  
Compliance Manager  
Compliance Auditor  
Compliance Inspector  
OWCP - (SGStell)

**No compliance recommendations were included in the previous inspection on August 25, 1999.**

---

**Summary of conditions for current inspection**

**Comments:**

No recommendations are included in this report, as the facility is well run and maintained.

# LABORATORY INSPECTION REPORT SUMMARY

<b>FACILITY NAME:</b> Motiva Fairfax	<b>FACILITY NO:</b> VA0002283	<b>INSPECTION DATE:</b> September 25, 2007
( ) Deficiencies	(X) No Deficiencies	
<b>LABORATORY RECORDS</b>		
The Laboratory Records section had <b>No Deficiencies</b> noted during the inspection.		
<b>GENERAL SAMPLING AND ANALYSIS</b>		
The General Sampling and Analysis section had <b>No Deficiencies</b> noted during the inspection.		
<b>LABORATORY EQUIPMENT</b>		
The Laboratory Equipment section had <b>No Deficiencies</b> noted during the inspection.		
<b>INDIVIDUAL PARAMETERS</b>		
pH		
The analysis for the parameter of pH had <b>No Deficiencies</b> noted during the inspection.		
<i>Recommendation:</i> Please remember to record the temperature of the buffers when verifying the calibration curve.		
<b>COMMENTS</b>		
The facility staff should check the DEQ website at <a href="http://www.deq.state.va.us/vpdes/checklist.htm">http://www.deq.state.va.us/vpdes/checklist.htm</a> and download the most recent inspection check sheets to keep up to date with changes in minimum laboratory requirements.		

**DEQ  
WATER FACILITY INSPECTION REPORT  
PREFACE**

VPDES/State Certification No.	(RE) Issuance Date	Amendment Date	Expiration Date
<b>VA0002283</b>	<b>April 16, 2003</b>		<b>April 15, 2008</b>
Facility Name	Address		Telephone Number
<b>Motiva – Fairfax Terminal</b>	<b>3800 Pickett Road Fairfax, VA</b>		<b>(703) 259-2080</b>
Owner Name	Address		Telephone Number
<b>Motiva Enterprises LLC</b>	<b>8206 Terminal Road Lorton, VA</b>		<b>(703) 550-9510</b>
Responsible Official	Title		Telephone Number
<b>Ms. Susan Horning</b>	<b>Terminal Manager</b>		<b>(703) 550-9510</b>
Responsible Operator	Operator Cert. Class/number		Telephone Number
<b>Mr. Anthony Mills</b>	<b>N/A</b>		<b>(703) 259-2080</b>

TYPE		DOMESTIC		INDUSTRIAL			
Federal		Major		Major		Primary	
Non-federal	X	Minor		Minor	X	Secondary	
INFLUENT CHARACTERISTICS:				DESIGN:			
	Flow			Variable			
	Population Served			N/A			
	Connections Served			One Terminal			
	BOD <sub>5</sub>			N/A			
	TSS			N/A			

Outfall 001 Effluent Limits (Stormwater)							
Parameter	Min.	Avg.	Max.	Parameter	Min.	Avg.	Max.
<b>Flow (MGD)</b>		<b>NL</b>	<b>NL</b>	<b>TPH (mg/L)</b>			<b>15</b>
<b>pH (S.U.)</b>	<b>6</b>		<b>9</b>	<b>Dissolved Copper (µg/L)</b>			<b>NL</b>
<b>Acute Toxicity (TU-A)</b>			<b>NL</b>	<b>Dissolved Zinc (µg/L)</b>			<b>NL</b>

Outfall 002 Effluent Limits (Groundwater Treatment)							
Parameter	Min.	Avg.	Max.	Parameter	Min.	Avg.	Max.
Flow (MGD)		NL	NL	Ethlybenzene (µg/L)		320	468
pH (S.U.)	6		9	Benzene (µg/L)		50	78
Hardness (mg/L)	50			Toluene (µg/L)		175	256
Total Zinc (µg/L)		53	65	Xylene (µg/L)		74	108
TPH (mg/L)			15	Napthalene (µg/L)		62	91
Chronic Toxicity (TU-C)			1.8				
Outfall 003 Effluent Limits (Hydrostatic Testing)							
Parameter	Min.	Avg.	Max.	Parameter	Min.	Avg.	Max.
Flow (MGD)		NL	NL	Ethlybenzene (µg/L)			320
pH (S.U.)	6		9	Benzene (µg/L)			53
Total Residual Chlorine (mg/L)			0.016	Toluene (µg/L)			175
TPH (mg/L)			15	Xylene (µg/L)			74
				Napthalene (µg/L)			62
	Receiving Stream			Crooks Branch			
	Basin			Potomac River			
	Discharge Point (LAT)			38° 50' 39" N			
	Discharge Point (LONG)			77° 16' 25" W			

**DEQ  
WATER FACILITY  
INSPECTION REPORT  
PART 1**

Inspection date: **September 25, 2007** Date form completed: **September 26, 2007**  
Inspection by: **Terry Nelson** Inspection agency: **DEQ NRO**  
Time spent: **5 hours** Announced: **Yes**  
Reviewed by: *E. [Signature] 10/1/07* Scheduled: **Yes**  
Present at inspection: **Doug Frasier; VA DEQ  
Susan Horning, Anthony Mills; Motiva Enterprises  
John Mittauer; MACTEC Engineering**

## TYPE OF FACILITY:

**Domestic****Industrial**

☐ Federal ☐ Major ☐ Major ☐ Primary  
☒ Nonfederal ☐ Minor ☒ Minor ☐ Secondary

## Type of inspection:

☒ Routine  
☐ Compliance/Assistance/Complaint  
☐ Reinspection

Date of last inspection: **August 25, 1999**  
Agency: **DEQ NRO**

Population served: approx. **N/A**

Connections served: approx. **One terminal**

**Outfall 001**

**No discharge for period May to July 2007.**

**Outfall 002**

**Quarterly Monitoring showed all petroleum by-products below Quantification Levels for April to June 2007.**

DATA VERIFIED IN PREFACE ☒ Updated ☐ No changes

Has there been any new construction? ☐ Yes ☒ No

If yes, were plans and specifications approved? ☐ Yes ☐ No ☒ NA

DEQ approval date: **N/A**

**(A) PLANT OPERATION AND MAINTENANCE**

1. Class and number of licensed operators: **None required**
2. Hours per day plant is manned: **City ordinance requires 24 hrs/day, 7 day/week when moving product**
3. Describe adequacy of staffing. ☒ Good ☐ Average ☐ Poor
4. Does the plant have an established program for training personnel? ☒ Yes ☐ No
5. Describe the adequacy of the training program. ☒ Good ☐ Average ☐ Poor
6. Are preventive maintenance tasks scheduled? ☒ Yes ☐ No
7. Describe the adequacy of maintenance. ☒ Good ☐ Average ☐ Poor\*
8. Does the plant experience any organic/hydraulic overloading?  
If yes, identify cause and impact on plant: ☐ Yes ☒ No
9. Any bypassing since last inspection? ☐ Yes ☒ No
10. Is the standby electric generator operational? ☐ Yes ☐ No\* ☒ NA
11. Is the STP alarm system operational? ☐ Yes ☐ No\* ☒ NA
12. How often is the standby generator exercised? **N/A**  
Power Transfer Switch? **N/A**  
Alarm System? **N/A**
13. When was the cross connection control device last tested on the potable water service?  
**Done by Fairfax City officials**
14. Is sludge being disposed in accordance with the approved sludge disposal plan?  
☒ Yes ☐ No ☐ NA
15. Is septage received by the facility? ☐ Yes ☒ No  
Is septage loading controlled? ☐ Yes ☐ No  
Are records maintained? ☐ Yes ☐ No
16. Overall appearance of facility: ☒ Good ☐ Average ☐ Poor

## Comments:

- 4. Haz Comm, SPCC, Hazwoper, RCRA, Site Emergency Plan**  
**11. Fueling bays are equipped with automatic shut-off system and alarms.**  
**14. Sludge is from tank bottoms and oil/water separator cleaning.**

**(B) PLANT RECORDS**

1. Which of the following records does the plant maintain?

Operational Logs for each unit process	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Instrument maintenance and calibration	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Mechanical equipment maintenance	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Industrial waste contribution (Municipal Facilities)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> NA

2. What does the operational log contain?

<input type="checkbox"/> Visual observations	<input checked="" type="checkbox"/> Flow measurement
<input checked="" type="checkbox"/> Laboratory results	<input checked="" type="checkbox"/> Process adjustments
<input type="checkbox"/> Control calculations	<input type="checkbox"/> Other (specify)

Comments:

3. What do the mechanical equipment records contain?

<input checked="" type="checkbox"/> As built plans and specs	<input checked="" type="checkbox"/> Spare parts inventory
<input checked="" type="checkbox"/> Manufacturers instructions	<input checked="" type="checkbox"/> Equipment/parts suppliers
<input checked="" type="checkbox"/> Lubrication schedules	<input type="checkbox"/> Other (specify)

Comments:

4. What do the industrial waste contribution records contain? (Municipal Only)

<input type="checkbox"/> Waste characteristics	<input type="checkbox"/> Locations and discharge types
<input type="checkbox"/> Impact on plant	<input type="checkbox"/> Other (specify)

Comments: **Not Applicable**

5. Which of the following records are kept at the plant and available to personnel?

<input checked="" type="checkbox"/> Equipment maintenance records	<input type="checkbox"/> Operational Log
<input type="checkbox"/> Industrial contributor records	<input checked="" type="checkbox"/> Instrumentation records
<input checked="" type="checkbox"/> Sampling and testing records	

6. Records not normally available to plant personnel and their location:

**pH calibration log maintained by MACTEC**

7. Were the records reviewed during the inspection?
- ☒
- Yes
- ☐
- No

8. Are the records adequate and the O & M Manual current?
- ☒
- Yes
- ☐
- No

9. Are the records maintained for the required 3-year time period?
- ☒
- Yes
- ☐
- No

Comments:

**(C) SAMPLING**

1. Do sampling locations appear to be capable of providing representative samples? ☒ Yes ☐ No\*
2. Do sample types correspond to those required by the VPDES permit? ☒ Yes ☐ No\*
3. Do sampling frequencies correspond to those required by the VPDES permit? ☒ Yes ☐ No\*
4. Are composite samples collected in proportion to flow? ☒ Yes ☐ No\* ☐ NA
5. Are composite samples refrigerated during collection? ☒ Yes ☐ No\* ☐ NA
6. Does plant maintain required records of sampling? ☒ Yes ☐ No\*
7. Does plant run operational control tests? ☒ Yes ☐ No

Comments: **Remediation system has control testing**

**(D) TESTING**

1. Who performs the testing? ☐ Plant ☐ Central Lab ☒ Commercial Lab  
 Name: **EA Labs, Sparks, MD** **Toxicity**  
**MACTEC, Ashburn, VA,** **pH**  
**Test America, Nashville, TN** **TSS, Organics**

**If plant performs any testing, complete 2-4.**

2. What method is used for chlorine analysis? **N/A (No hydrostatic tests in past 3 years)**
3. Does plant appear to have sufficient equipment to perform required tests? ☐ Yes ☐ No\*
4. Does testing equipment appear to be clean and/or operable? ☐ Yes ☐ No\*

Comments:

**(E) FOR INDUSTRIAL FACILITIES WITH TECHNOLOGY BASED LIMITS ONLY**

1. Is the production process as described in the permit application? (If no, describe changes in comments)  
☒ Yes ☐ No ☐ NA
2. Do products and production rates correspond as provided in the permit application? (If no, list differences)  
☒ Yes ☐ No ☐ NA
3. Has the State been notified of the changes and their impact on plant effluent? Date:  
☐ Yes ☐ No\* ☒ NA

Comments:

## Facility Description

The Motiva Enterprises Fairfax Terminal is a fuel storage and distribution facility where petroleum products are received via Colonial Pipeline and distributed to offsite retail stations by truck and to Washington Dulles Airport via pipeline. Typical product includes unleaded gasoline, premium unleaded, diesel fuel, and aviation fuel. The facility is located on Pickett Road adjacent to the facilities known as the Fairfax Terminal Complex. All stormwater on the site is directed to the main retention pond with the exception of a small roadside area within drainage area B. Runoff from this area is routed to a common pond shared with several other fuel distributors in the area. Discharge from this common pond is governed by VPDES Permit # VA0001872 issued to Fairfax Terminal Complex.

Motiva maintains two VPDES permitted outfalls and is also authorized to discharge Hydrostatic Tank Test Waters from an outfall designated as Outfall 003. Outfall 001 consists of treated stormwater from the loading racks and berm area surrounding the storage tanks. Stormwater runoff from the fuel loading area and the bulk oil storage area is routed through two parallel Oil/Water Separators (O/W Separator) designated as the upper and lower separators and then into a 400,000 gallon retention pond. The retention pond discharge is designated as Outfall 001. The discharge of treated groundwater is designated as Outfall 002. The groundwater is from a remediation system installed following the discovery of petroleum contamination in 1990.

### Outfall 001

The truck loading area is covered and has a small berm/curb around it, as well as surface drains for spill containment. Any spillage and runoff from this area runs to a baffled 10,000 gallon "relaxer" tank where large product flows can settle down prior to being pumped to the 2,000 gallon upper O/W separator. This O/W separator unit also handles any flows from the air eliminator. The O/W separator is located to the south of the loading area and has a 2,000 gallon holding tank for product recovered by the O/W separator. The maintenance process for this tank includes frequent pump out of settled materials which are then hauled to an appropriate treatment facility. The terminal operates 24 hours a day, 7 days a week. Additional safety equipment include television monitoring, automatic shutoff with overfill, and fire suppression.

West of the truck loading area is a 4,000 gallon reclaim tank. Also, buckets of miscellaneous product from testing are received in this tank. Material from the reclaim tank is manually pumped back into the storage tank with the lowest grade product in it. The air eliminators are located within a containment area.

The nine main storage tanks are contained within a berm, which is designed to contain 115-125% of the volume of the largest storage tank. Stormwater impounded within the berm collects in a concrete collection sump and is manually pumped out through the lower O/W separator on the south side of the tanks. From this O/W separator, the water is discharged into the retention pond and the separated fuel product is hauled offsite, by a licensed contractor, for disposal/reuse. The bermed tank/storage area does not have a synthetic liner, but does have a compacted earth and gravel bottom. Tank bottom waters are collected in a storage container for offsite contractor disposal. Bottom waters are removed when they reach three inches in the bottom of the storage tank and are usually removed once a year.

All nine tanks have been converted to double bottom tanks with monitoring valves to allow for quick and accurate leak detection. All tanks are monitored for high level, overflow, and low floating roof level. All gasoline tanks have floating roofs and the jet fuel and diesel tanks have standard cone roofs.

Fuel additives are stored on-site in an area near the front of the property that is south of the loading area and east of the bermed storage tank area. Most tanks are single walled and all are positioned on concrete pads within a concrete containment area that has a valved outlet. The red dye tank also has an attached containment curtain. The valve is normally left open except when products are being received. Any spill moving beyond this area would be stopped by the main secondary containment dike.

The retention pond is lined and stores rainwater from the containment area around the above ground storage tanks. During rain events, water collects inside the containment area. Accumulated rainwater is then pumped (manual operation) into the lower O/W separator. The water then flows to the pond, which has a storage capacity of about 400,000 gallons. When the pond fills up and additional storage capacity is needed, the discharge valve is manually opened (after proper sampling) and the pond is drained to about 50% capacity. The discharge pipe is approximately six inches in diameter and it takes about eight hours to drain down the pond.

Effluent from Outfall 001 discharges into a concrete culvert, runs into an underground corrugated pipe, runs under Pickett Road and enters Crook Branch. There are two valves between the pond and the culvert and both must be open for a discharge to occur. Both valves are normally kept closed. A Kent Bubbler flow meter was installed to measure flows and to collect composite samples (flow based). Discharge cycles are usually around 24 hours but can last up to 72 hours if the pond is at capacity. Since the pond is primarily composed of storm water runoff, the discharge is considered intermittent.

### **Outfall 002**

A Pollution response Investigation conducted in September of 1990 led to the discovery of an extensive petroleum product contamination of groundwater at and near the Pickett Road Terminal. Although the exact source was not determined, the plume was characterized as 7% gasoline, 46% diesel, and 46% aviation fuel. Presently there is an extensive well recovery system and two groundwater treatment systems in operation under EPA oversight. The groundwater treatment systems are identical, except for treatment capacity, and consist of phase separation, air stripping, and carbon adsorption. Treatment System 1 (TS1) receives flow from trenches in the Mantua subdivision while TS2 handles flow from the Tovito Lane and Common Area trenches. The interceptor trench systems consist of gravel-filled trenches equipped with groundwater depression wells and skimmer pumps. Treatment in both units consists of oil/water separation, surge equalization, filtration, air stripping, and carbon adsorption. Water from the onsite recovery trench bypasses the O/W separator and goes directly into the storage vault prior to air stripping and carbon adsorption. The effluent from TS1 and TS2 are combined prior to flowing into TS3. TS3 is designed to adjust the hardness and remove dissolved manganese.

The entire system is automated and alarmed, and is capable of running 24 hours a day. The carbon units are backwashed weekly, with the resulting backwash wastewater sent to a settling tank prior to discharge to the sanitary sewer. Process control testing is conducted on influent, intermediate, and effluent samples, with the data reported to DEQ along with the monthly DMRs. The air strippers are cleaned whenever BTEX reduction are less than 85%, or concentrations are greater than 10 mg/L for two consecutive samples. Whenever midpoint carbon breakthrough levels are detected during two consecutive sample events, the carbon is replaced.

The sampling point for Outfall 002 is located adjacent to the treatment units in a concrete vault. The discharge from 002 runs into the same corrugated steel pipe that 001 enters and enters Crook Branch at the same point. A weir and flow bubbler system was installed at the vault to facilitate accurate flow measurements and any necessary composite sampling.

### **Outfall 003**

This outfall has been established for the discharge of hydrostatic tank testing waters. Discharges through this outfall would enter the same corrugated steel pipe downstream from Outfall 001. Prior to discharge, test waters would be tested at three points in the tank (top, middle, and bottom). This water will not flow through the retention pond or an O/W separator. The only possible treatment necessary would be dechlorination since water will come from the Fairfax Water Authority. If necessary, this will be accomplished through chemical means at the point of discharge from the tanks.

**UNIT PROCESS: Oil/Water Separator**

1. Number of units: **2** Number in operation: **2**
2. Type of separator: ☐ Modified septic tank ☒ Commercial Unit ☐ Other
3. Unit sized for adequate detention/floatation: ☒ Yes ☐ No
4. Discharge pipe submerged adequately: ☒ Yes ☐ No
5. Type of oil received: **Mixed petroleum products**
6. Depth of oil: **None**
7. Cleaning frequency: **Annually**
8. Amount of oil recovered at cleaning: **2,245 gallons of oil/water/sludge**
9. Method of disposal: **Pump and haul to treatment facility**
10. Appearance of discharge (visible sheen?): **No discharge during inspection**

## Comments:

- **Monthly inspections of outfall did not show any record of oil sheen.**
- **The separators were last cleaned on May 30, 2007 by US Filter.**

10/01

9

**LABORATORY RECORDS SECTION**

LABORATORY RECORDS INCLUDE THE FOLLOWING:

<input checked="" type="checkbox"/>	SAMPLING DATE	<input checked="" type="checkbox"/>	ANALYSIS DATE	<input type="checkbox"/>	CONT MONITORING CHART
<input checked="" type="checkbox"/>	SAMPLING TIME	<input checked="" type="checkbox"/>	ANALYSIS TIME	<input checked="" type="checkbox"/>	INSTRUMENT CALIBRATION
<input checked="" type="checkbox"/>	SAMPLE LOCATION	<input checked="" type="checkbox"/>	TEST METHOD	<input type="checkbox"/>	INSTRUMENT MAINTENANCE
				<input checked="" type="checkbox"/>	CERTIFICATE OF ANALYSIS

WRITTEN INSTRUCTIONS INCLUDE THE FOLLOWING:

<input type="checkbox"/>	SAMPLING SCHEDULES	<input type="checkbox"/>	CALCULATIONS	<input type="checkbox"/>	ANALYSIS PROCEDURES
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	YES	NO	N/A
DO ALL ANALYSTS INITIAL THEIR WORK?	<input checked="" type="checkbox"/>		
DO BENCH SHEETS INCLUDE ALL INFORMATION NECESSARY TO DETERMINE RESULTS?	<input checked="" type="checkbox"/>		
IS THE DMR COMPLETE AND CORRECT? MONTH(S) REVIEWED: <b>April - June 2007</b>	<input checked="" type="checkbox"/>		
ARE ALL MONITORING VALUES REQUIRED BY THE PERMIT REPORTED?	<input checked="" type="checkbox"/>		

**GENERAL SAMPLING AND ANALYSIS SECTION**

	YES	NO	N/A
ARE SAMPLE LOCATION(S) ACCORDING TO PERMIT REQUIREMENTS?	<input checked="" type="checkbox"/>		
ARE SAMPLE COLLECTION PROCEDURES APPROPRIATE?	<input checked="" type="checkbox"/>		
IS SAMPLE EQUIPMENT CONDITION ADEQUATE?	<input checked="" type="checkbox"/>		
IS FLOW MEASUREMENT ACCORDING TO PERMIT REQUIREMENTS?	<input checked="" type="checkbox"/>		
ARE COMPOSITE SAMPLES REPRESENTATIVE OF FLOW?			<input checked="" type="checkbox"/>
ARE SAMPLE HOLDING TIMES AND PRESERVATION ADEQUATE?	<input checked="" type="checkbox"/>		
IF ANALYSIS IS PERFORMED AT ANOTHER LOCATION, ARE SHIPPING PROCEDURES ADEQUATE? LIST PARAMETERS AND NAME & ADDRESS OF LAB: <b>Test America in Nashville, TN analyzed TSS, Organics</b>	<input checked="" type="checkbox"/>		

**LABORATORY EQUIPMENT SECTION**

	YES	NO	N/A
IS LABORATORY EQUIPMENT IN PROPER OPERATING RANGE?	<input checked="" type="checkbox"/>		
ARE ANNUAL THERMOMETER CALIBRATION(S) ADEQUATE?	<input checked="" type="checkbox"/>		
IS THE LABORATORY GRADE WATER SUPPLY ADEQUATE?			<input checked="" type="checkbox"/>
ARE ANALYTICAL BALANCE(S) ADEQUATE?			<input checked="" type="checkbox"/>

ANALYST:	John Mittauer	VPDES NO	VA0002283
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**Parameter: Hydrogen Ion (pH)**

**Method: Electrometric**

08/06

<b>X</b>	18th EDITION STANDARD METHODS-4500-H-B
	EPA METHODS FOR CHEMICAL ANALYSIS-150.1
	ASTM-D1293-84(90)(A or B)
	USGS-METHODS IN WATER AND FLUVIAL SEDIMENTS-I-1586-85

		Y	N
1)	Is the electrode in good condition (no chloride precipitate, etc.)? [SM-2.b/c and 5.b; 150.1-4.3/Permit]	X	
2)	Is electrode storage solution in accordance with manufacturer's instructions? [Mfr.]	X	
3)	Is meter calibrated on at least a daily basis? [SM-4.a; 150.1-8.1]	X	
4)	Are two buffers which bracket the anticipated range of the sample used to calibrate the meter? (For meters not capable of performing a two point calibration is a second buffer which brackets the sample pH analyzed and found to be within $\pm 0.1$ SU of the expected value? [SM-2.a; 150.1-7.2]	X	
5)	Is meter calibration documented? [Permit]	X	
6)	Does meter read within 0.1 SU for the pH of the second buffer solution? [SM-4.a/5.b; 150.1-7.2.1]	X	
7)	After calibration, is a buffer of 7 SU analyzed as a check sample to verify that calibration is correct? Agreement should be within $\pm 0.1$ SU. [Permit]	X	
8)	Do the buffer solutions appear to be free of contamination or growths? [SM-3.a; Permit]	X	
9)	Are buffer solutions within their listed shelf life or have they been prepared within the last 4 weeks? [SM-3.a; 150.1-6.1.1]	X	
10)	Is the cap or sleeve covering the access hole on the reference electrode removed when measuring pH? [Mfr.]	NA	
11)	Is the temperature of buffer solutions and samples measured prior to testing? [SM-1.a; 150.1-9.1]		X
12)	For meters with ATC that also have temperature display, was the thermometer calibrated annually?	X	
13)	Was the electrode rinsed between solutions? [SM-4.a; 150.1-8.4]	X	
14)	Was the electrode blotted dry between solutions (disregard if rinse is next solution)? [SM-4.a; 150.1-8.4]	X	
15)	Is the sample stirred gently at a constant speed during measurement? [SM-4.b; 150.1-8.4]	X	
16)	Does the meter hold a steady reading after reaching equilibrium? [SM-4.b/5 ;150.1-8.4]	X	

COMMENTS:	<b>12) The meter is recalibrated by manufacturer each year, including temperature.</b>
PROBLEMS:	<b>11) When verifying the calibration curve, please record the temperature of the buffers.</b>

# FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: **Motiva - Fairfax Terminal - Outfall 001**

Permit No.: **VA0002283**

Receiving Stream: **Crook Branch**

Version: OWP Guidance Memo 00-2011 (8/24/00)

## Stream Information

Mean Hardness (as CaCO3) =	mg/L
90% Temperature (Annual) =	deg C
90% Temperature (Wet season) =	deg C
90% Maximum pH =	SU
10% Maximum pH =	SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

## Stream Flows

1Q10 (Annual) =	0 MGD
7Q10 (Annual) =	0 MGD
30Q10 (Annual) =	0 MGD
1Q10 (Wet season) =	0 MGD
30Q10 (Wet season) =	0 MGD
30Q5 =	0 MGD
Harmonic Mean =	0 MGD
Annual Average =	0 MGD

## Mixing Information

Annual - 1Q10 Mix =	100 %
- 7Q10 Mix =	100 %
- 30Q10 Mix =	100 %
Wet Season - 1Q10 Mix =	100 %
- 30Q10 Mix =	100 %

## Effluent Information

Mean Hardness (as CaCO3) =	50 mg/L
90% Temp (Annual) =	25 deg C
90% Temp (Wet season) =	deg C
90% Maximum pH =	7.5 SU
10% Maximum pH =	SU
Discharge Flow =	0.085 MGD

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	--	--	na	2.7E+03	--	--	na	2.7E+03	--	--	--	--	--	--	--	--	--	--	na	2.7E+03
Acrolein	0	--	--	na	7.8E+02	--	--	na	7.8E+02	--	--	--	--	--	--	--	--	--	--	na	7.8E+02
Acrylonitrile <sup>C</sup>	0	--	--	na	6.6E+00	--	--	na	6.6E+00	--	--	--	--	--	--	--	--	--	--	na	6.6E+00
Aldrin <sup>C</sup>	0	3.0E+00	--	na	1.4E-03	3.0E+00	--	na	1.4E-03	--	--	--	--	--	--	--	--	3.0E+00	--	na	1.4E-03
Ammonia-N (mg/l) (Yearly)	0	1.99E+01	2.22E+00	na	--	2.0E+01	2.2E+00	na	--	--	--	--	--	--	--	--	--	2.0E+01	2.2E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	1.99E+01	4.36E+00	na	--	2.0E+01	4.4E+00	na	--	--	--	--	--	--	--	--	--	2.0E+01	4.4E+00	na	--
Anthracene	0	--	--	na	1.1E+05	--	--	na	1.1E+05	--	--	--	--	--	--	--	--	--	--	na	1.1E+05
Antimony	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene <sup>C</sup>	0	--	--	na	7.1E+02	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	--	--	na	7.1E+02
Benzidine <sup>C</sup>	0	--	--	na	5.4E-03	--	--	na	5.4E-03	--	--	--	--	--	--	--	--	--	--	na	5.4E-03
Benzo (a) anthracene <sup>C</sup>	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (b) fluoranthene <sup>C</sup>	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (k) fluoranthene <sup>C</sup>	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (a) pyrene <sup>C</sup>	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Bis2-Chloroethyl Ether	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Bis2-Chloroisopropyl Ether	0	--	--	na	1.7E+05	--	--	na	1.7E+05	--	--	--	--	--	--	--	--	--	--	na	1.7E+05
Bromoform <sup>C</sup>	0	--	--	na	3.6E+03	--	--	na	3.6E+03	--	--	--	--	--	--	--	--	--	--	na	3.6E+03
Butylbenzylphthalate	0	--	--	na	5.2E+03	--	--	na	5.2E+03	--	--	--	--	--	--	--	--	--	--	na	5.2E+03
Cadmium	0	1.8E+00	6.6E-01	na	--	1.8E+00	6.6E-01	na	--	--	--	--	--	--	--	--	--	1.8E+00	6.6E-01	na	--
Carbon Tetrachloride <sup>C</sup>	0	--	--	na	4.4E+01	--	--	na	4.4E+01	--	--	--	--	--	--	--	--	--	--	na	4.4E+01
Chlordane <sup>C</sup>	0	2.4E+00	4.3E-03	na	2.2E-02	2.4E+00	4.3E-03	na	2.2E-02	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	2.2E-02
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane <sup>C</sup>	0	--	--	na	3.4E+02	--	--	na	3.4E+02	--	--	--	--	--	--	--	--	--	--	na	3.4E+02
Chloroform <sup>C</sup>	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	4.0E+02	--	--	--	--	--	--	--	--	--	--	na	4.0E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	--	--	--	--	--	--	--	--	3.2E+02	4.2E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene <sup>C</sup>	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	--	--	--	--	--	--	--	--	7.0E+00	5.0E+00	na	--
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	2.2E+01	5.2E+00	na	2.2E+05	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	2.2E+05
DDD <sup>C</sup>	0	--	--	na	8.4E-03	--	--	na	8.4E-03	--	--	--	--	--	--	--	--	--	--	na	8.4E-03
DDE <sup>C</sup>	0	--	--	na	5.9E-03	--	--	na	5.9E-03	--	--	--	--	--	--	--	--	--	--	na	5.9E-03
DDT <sup>C</sup>	0	1.1E+00	1.0E-03	na	5.9E-03	1.1E+00	1.0E-03	na	5.9E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	5.9E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Dibenz(a,h)anthracene <sup>C</sup>	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
Dichloromethane (Methylene Chloride) <sup>C</sup>	0	--	--	na	1.6E+04	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
3,3-Dichlorobenzidine <sup>C</sup>	0	--	--	na	7.7E-01	--	--	na	7.7E-01	--	--	--	--	--	--	--	--	--	--	na	7.7E-01
Dichlorobromomethane <sup>C</sup>	0	--	--	na	4.6E+02	--	--	na	4.6E+02	--	--	--	--	--	--	--	--	--	--	na	4.6E+02
1,2-Dichloroethane <sup>C</sup>	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	1.4E+05	--	--	--	--	--	--	--	--	--	--	na	1.4E+05
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	7.9E+02	--	--	--	--	--	--	--	--	--	--	na	7.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane <sup>C</sup>	0	--	--	na	3.9E+02	--	--	na	3.9E+02	--	--	--	--	--	--	--	--	--	--	na	3.9E+02
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Dieldrin <sup>C</sup>	0	2.4E-01	5.6E-02	na	1.4E-03	2.4E-01	5.6E-02	na	1.4E-03	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	1.4E-03
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
Di-2-Ethylhexyl Phthalate <sup>C</sup>	0	--	--	na	5.9E+01	--	--	na	5.9E+01	--	--	--	--	--	--	--	--	--	--	na	5.9E+01
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	2.9E+06	--	--	--	--	--	--	--	--	--	--	na	2.9E+06
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	7.7E+02	--	--	--	--	--	--	--	--	--	--	na	7.7E+02
2,4-Dinitrotoluene <sup>C</sup>	0	--	--	na	9.1E+01	--	--	na	9.1E+01	--	--	--	--	--	--	--	--	--	--	na	9.1E+01
Dioxin (2,3,7,8- tetrachlorodibenzo-p- dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	--	--	--	--	--	--	--	--	na	na
1,2-Diphenylhydrazine <sup>C</sup>	0	--	--	na	5.4E+00	--	--	na	5.4E+00	--	--	--	--	--	--	--	--	--	--	na	5.4E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	2.4E+02	--	--	--	--	--	--	--	--	--	--	na	2.4E+02
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	8.6E-02	3.6E-02	na	8.1E-01	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	8.1E-01
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	8.1E-01	--	--	--	--	--	--	--	--	--	--	na	8.1E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
Fluorene	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor <sup>C</sup>	0	5.2E-01	3.8E-03	na	2.1E-03	5.2E-01	3.8E-03	na	2.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	2.1E-03
Heptachlor Epoxide <sup>C</sup>	0	5.2E-01	3.8E-03	na	1.1E-03	5.2E-01	3.8E-03	na	1.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	1.1E-03
Hexachlorobenzene <sup>C</sup>	0	--	--	na	7.7E-03	--	--	na	7.7E-03	--	--	--	--	--	--	--	--	--	--	na	7.7E-03
Hexachlorobutadiene <sup>C</sup>	0	--	--	na	5.0E+02	--	--	na	5.0E+02	--	--	--	--	--	--	--	--	--	--	na	5.0E+02
Hexachlorocyclohexane																					
Alpha-BHC <sup>C</sup>	0	--	--	na	1.3E-01	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	--	--	na	1.3E-01
Hexachlorocyclohexane																					
Beta-BHC <sup>C</sup>	0	--	--	na	4.6E-01	--	--	na	4.6E-01	--	--	--	--	--	--	--	--	--	--	na	4.6E-01
Hexachlorocyclohexane																					
Gamma-BHC <sup>C</sup> (Lindane)	0	9.5E-01	na	na	6.3E-01	9.5E-01	--	na	6.3E-01	--	--	--	--	--	--	--	--	9.5E-01	--	na	6.3E-01
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
Hexachloroethane <sup>C</sup>	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene <sup>C</sup>	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone <sup>C</sup>	0	--	--	na	2.6E+04	--	--	na	2.6E+04	--	--	--	--	--	--	--	--	--	--	na	2.6E+04
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	--	--	--	--	--	--	--	--	4.9E+01	5.6E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.4E+00	7.7E-01	na	5.1E-02	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	na	5.1E-02
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.0E+02	1.1E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
N-Nitrosodimethylamine <sup>C</sup>	0	--	--	na	8.1E+01	--	--	na	8.1E+01	--	--	--	--	--	--	--	--	--	--	na	8.1E+01
N-Nitrosodiphenylamine <sup>C</sup>	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
N-Nitrosodi-n-propylamine <sup>C</sup>	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB-1016	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1221	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1232	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1242	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1248	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1254	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1260	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB Total <sup>C</sup>	0	--	--	na	1.7E-03	--	--	na	1.7E-03	--	--	--	--	--	--	--	--	--	--	na	1.7E-03

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol <sup>C</sup>	0	7.7E-03	5.9E-03	na	8.2E+01	7.7E-03	5.9E-03	na	8.2E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	na	8.2E+01
Phenol	0	--	--	na	4.6E+06	--	--	na	4.6E+06	--	--	--	--	--	--	--	--	--	--	na	4.6E+06
Pyrene	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity Beta and Photon Activity (mrem/yr)	0	--	--	na	1.5E+01	--	--	na	1.5E+01	--	--	--	--	--	--	--	--	--	--	na	1.5E+01
Strontium-90	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	na	4.0E+00
Tritium	0	--	--	na	8.0E+00	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
Selenium	0	--	--	na	2.0E+04	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	--	--	na	2.0E+04
Silver	0	2.0E+01	5.0E+00	na	1.1E+04	2.0E+01	5.0E+00	na	1.1E+04	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	1.1E+04
Sulfate	0	1.0E+00	--	na	--	1.0E+00	--	na	--	--	--	--	--	--	--	--	--	1.0E+00	--	na	--
1,1,2,2-Tetrachloroethane <sup>C</sup>	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Tetrachloroethylene <sup>C</sup>	0	--	--	na	1.1E+02	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	1.1E+02
Thallium	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Toluene	0	--	--	na	6.3E+00	--	--	na	6.3E+00	--	--	--	--	--	--	--	--	--	--	na	6.3E+00
Total dissolved solids	0	--	--	na	2.0E+05	--	--	na	2.0E+05	--	--	--	--	--	--	--	--	--	--	na	2.0E+05
Toxaphene <sup>C</sup>	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Tributyltin	0	7.3E-01	2.0E-04	na	7.5E-03	7.3E-01	2.0E-04	na	7.5E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	7.5E-03
1,2,4-Trichlorobenzene	0	4.6E-01	6.3E-02	na	--	4.6E-01	6.3E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	6.3E-02	na	--
1,1,2-Trichloroethane <sup>C</sup>	0	--	--	na	9.4E+02	--	--	na	9.4E+02	--	--	--	--	--	--	--	--	--	--	na	9.4E+02
Trichloroethylene <sup>C</sup>	0	--	--	na	4.2E+02	--	--	na	4.2E+02	--	--	--	--	--	--	--	--	--	--	na	4.2E+02
2,4,6-Trichlorophenol <sup>C</sup>	0	--	--	na	8.1E+02	--	--	na	8.1E+02	--	--	--	--	--	--	--	--	--	--	na	8.1E+02
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	6.5E+01	--	--	na	6.5E+01	--	--	--	--	--	--	--	--	--	--	na	6.5E+01
Vinyl Chloride <sup>C</sup>	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Zinc	0	--	--	na	6.1E+01	--	--	na	6.1E+01	--	--	--	--	--	--	--	--	--	--	na	6.1E+01
	0	6.5E+01	6.6E+01	na	6.9E+04	6.5E+01	6.6E+01	na	6.9E+04	--	--	--	--	--	--	--	--	6.5E+01	6.6E+01	na	6.9E+04

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.  
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic  
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	4.3E+03
Arsenic	9.0E+01
Barium	na
Cadmium	3.9E-01
Chromium III	2.5E+01
Chromium VI	6.4E+00
Copper	2.8E+00
Iron	na
Lead	3.4E+00
Manganese	na
Mercury	5.1E-02
Nickel	6.8E+00
Selenium	3.0E+00
Silver	4.2E-01
Zinc	2.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

# FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: **Motiva - Fairfax Terminal - Outfall 002**

Permit No.: **VA0002283**

Receiving Stream: **Crook Branch**

Version: OWP Guidance Memo 00-2011 (8/24/00)

## Stream Information

Mean Hardness (as CaCO3) =	mg/L
90% Temperature (Annual) =	deg C
90% Temperature (Wet season) =	deg C
90% Maximum pH =	SU
10% Maximum pH =	SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

## Stream Flows

1Q10 (Annual) =	0 MGD
7Q10 (Annual) =	0 MGD
30Q10 (Annual) =	0 MGD
1Q10 (Wet season) =	0 MGD
30Q10 (Wet season) =	0 MGD
30Q5 =	0 MGD
Harmonic Mean =	0 MGD
Annual Average =	0 MGD

## Mixing Information

Annual - 1Q10 Mix =	100 %
- 7Q10 Mix =	100 %
- 30Q10 Mix =	100 %
Wet Season - 1Q10 Mix =	100 %
- 30Q10 Mix =	100 %

## Effluent Information

Mean Hardness (as CaCO3) =	115 mg/L
90% Temp (Annual) =	25 deg C
90% Temp (Wet season) =	deg C
90% Maximum pH =	7.5 SU
10% Maximum pH =	SU
Discharge Flow =	0.021 MGD

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	--	--	na	2.7E+03	--	--	na	2.7E+03	--	--	--	--	--	--	--	--	--	--	na	2.7E+03
Acrolein	0	--	--	na	7.8E+02	--	--	na	7.8E+02	--	--	--	--	--	--	--	--	--	--	na	7.8E+02
Acrylonitrile <sup>C</sup>	0	--	--	na	6.6E+00	--	--	na	6.6E+00	--	--	--	--	--	--	--	--	--	--	na	6.6E+00
Aldrin <sup>C</sup>	0	3.0E+00	--	na	1.4E-03	3.0E+00	--	na	1.4E-03	--	--	--	--	--	--	--	--	3.0E+00	--	na	1.4E-03
Ammonia-N (mg/l) (Yearly)	0	1.99E+01	2.22E+00	na	--	2.0E+01	2.2E+00	na	--	--	--	--	--	--	--	--	--	2.0E+01	2.2E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	1.99E+01	4.36E+00	na	--	2.0E+01	4.4E+00	na	--	--	--	--	--	--	--	--	--	2.0E+01	4.4E+00	na	--
Anthracene	0	--	--	na	1.1E+05	--	--	na	1.1E+05	--	--	--	--	--	--	--	--	--	--	na	1.1E+05
Antimony	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene <sup>C</sup>	0	--	--	na	7.1E+02	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	--	--	na	7.1E+02
Benzidine <sup>C</sup>	0	--	--	na	5.4E-03	--	--	na	5.4E-03	--	--	--	--	--	--	--	--	--	--	na	5.4E-03
Benzo (a) anthracene <sup>C</sup>	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (b) fluoranthene <sup>C</sup>	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (k) fluoranthene <sup>C</sup>	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (a) pyrene <sup>C</sup>	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Bis(2-Chloroethyl) Ether	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Bis(2-Chloroisopropyl) Ether	0	--	--	na	1.7E+05	--	--	na	1.7E+05	--	--	--	--	--	--	--	--	--	--	na	1.7E+05
Bromoform <sup>C</sup>	0	--	--	na	3.6E+03	--	--	na	3.6E+03	--	--	--	--	--	--	--	--	--	--	na	3.6E+03
Butylbenzylphthalate	0	--	--	na	5.2E+03	--	--	na	5.2E+03	--	--	--	--	--	--	--	--	--	--	na	5.2E+03
Cadmium	0	4.6E+00	1.3E+00	na	--	4.6E+00	1.3E+00	na	--	--	--	--	--	--	--	--	--	4.6E+00	1.3E+00	na	--
Carbon Tetrachloride <sup>C</sup>	0	--	--	na	4.4E+01	--	--	na	4.4E+01	--	--	--	--	--	--	--	--	--	--	na	4.4E+01
Chlordane <sup>C</sup>	0	2.4E+00	4.3E-03	na	2.2E-02	2.4E+00	4.3E-03	na	2.2E-02	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	2.2E-02
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane <sup>C</sup>	0	--	--	na	3.4E+02	--	--	na	3.4E+02	--	--	--	--	--	--	--	--	--	--	na	3.4E+02
Chloroform <sup>C</sup>	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	4.0E+02	--	--	--	--	--	--	--	--	--	--	na	4.0E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	6.4E+02	8.3E+01	na	--	6.4E+02	8.3E+01	na	--	--	--	--	--	--	--	--	--	6.4E+02	8.3E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene <sup>C</sup>	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Copper	0	1.5E+01	1.0E+01	na	--	1.5E+01	1.0E+01	na	--	--	--	--	--	--	--	--	--	1.5E+01	1.0E+01	na	--
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	2.2E+01	5.2E+00	na	2.2E+05	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	2.2E+05
DDD <sup>C</sup>	0	--	--	na	8.4E-03	--	--	na	8.4E-03	--	--	--	--	--	--	--	--	--	--	na	8.4E-03
DDE <sup>C</sup>	0	--	--	na	5.9E-03	--	--	na	5.9E-03	--	--	--	--	--	--	--	--	--	--	na	5.9E-03
DDT <sup>C</sup>	0	1.1E+00	1.0E-03	na	5.9E-03	1.1E+00	1.0E-03	na	5.9E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	5.9E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Dibenz(a,h)anthracene <sup>C</sup>	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
Dichloromethane (Methylene Chloride) <sup>C</sup>	0	--	--	na	1.6E+04	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
3,3-Dichlorobenzidine <sup>C</sup>	0	--	--	na	7.7E-01	--	--	na	7.7E-01	--	--	--	--	--	--	--	--	--	--	na	7.7E-01
Dichlorobromomethane <sup>C</sup>	0	--	--	na	4.6E+02	--	--	na	4.6E+02	--	--	--	--	--	--	--	--	--	--	na	4.6E+02
1,2-Dichloroethane <sup>C</sup>	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	1.4E+05	--	--	--	--	--	--	--	--	--	--	na	1.4E+05
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	7.9E+02	--	--	--	--	--	--	--	--	--	--	na	7.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane <sup>C</sup>	0	--	--	na	3.9E+02	--	--	na	3.9E+02	--	--	--	--	--	--	--	--	--	--	na	3.9E+02
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Dieldrin <sup>C</sup>	0	2.4E-01	5.6E-02	na	1.4E-03	2.4E-01	5.6E-02	na	1.4E-03	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	1.4E-03
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
Di-2-Ethylhexyl Phthalate <sup>C</sup>	0	--	--	na	5.9E+01	--	--	na	5.9E+01	--	--	--	--	--	--	--	--	--	--	na	5.9E+01
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	2.9E+06	--	--	--	--	--	--	--	--	--	--	na	2.9E+06
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	7.7E+02	--	--	--	--	--	--	--	--	--	--	na	7.7E+02
2,4-Dinitrotoluene <sup>C</sup>	0	--	--	na	9.1E+01	--	--	na	9.1E+01	--	--	--	--	--	--	--	--	--	--	na	9.1E+01
Dioxin (2,3,7,8- tetrachlorodibenzo-p- dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	--	--	--	--	--	--	--	--	na	na
1,2-Diphenylhydrazine <sup>C</sup>	0	--	--	na	5.4E+00	--	--	na	5.4E+00	--	--	--	--	--	--	--	--	--	--	na	5.4E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	2.4E+02	--	--	--	--	--	--	--	--	--	--	na	2.4E+02
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	8.6E-02	3.6E-02	na	8.1E-01	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	8.1E-01
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	8.1E-01	--	--	--	--	--	--	--	--	--	--	na	8.1E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
Fluorene	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor <sup>C</sup>	0	5.2E-01	3.8E-03	na	2.1E-03	5.2E-01	3.8E-03	na	2.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	2.1E-03
Heptachlor Epoxide <sup>C</sup>	0	5.2E-01	3.8E-03	na	1.1E-03	5.2E-01	3.8E-03	na	1.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	1.1E-03
Hexachlorobenzene <sup>C</sup>	0	--	--	na	7.7E-03	--	--	na	7.7E-03	--	--	--	--	--	--	--	--	--	--	na	7.7E-03
Hexachlorobutadiene <sup>C</sup>	0	--	--	na	5.0E+02	--	--	na	5.0E+02	--	--	--	--	--	--	--	--	--	--	na	5.0E+02
Hexachlorocyclohexane	0	--	--	na	1.3E-01	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	--	--	na	1.3E-01
Alpha-BHC <sup>C</sup>																					
Hexachlorocyclohexane	0	--	--	na	4.6E-01	--	--	na	4.6E-01	--	--	--	--	--	--	--	--	--	--	na	4.6E-01
Beta-BHC <sup>C</sup>																					
Hexachlorocyclohexane	0	9.5E-01	na	na	6.3E-01	9.5E-01	--	na	6.3E-01	--	--	--	--	--	--	--	--	9.5E-01	--	na	6.3E-01
Gamma-BHC <sup>C</sup> (Lindane)																					
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
Hexachloroethane <sup>C</sup>	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene <sup>C</sup>	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone <sup>C</sup>	0	--	--	na	2.6E+04	--	--	na	2.6E+04	--	--	--	--	--	--	--	--	--	--	na	2.6E+04
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	1.4E+02	1.6E+01	na	--	1.4E+02	1.6E+01	na	--	--	--	--	--	--	--	--	--	1.4E+02	1.6E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.4E+00	7.7E-01	na	5.1E-02	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	na	5.1E-02
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04
Nickel	0	2.1E+02	2.3E+01	na	4.6E+03	2.1E+02	2.3E+01	na	4.6E+03	--	--	--	--	--	--	--	--	2.1E+02	2.3E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
N-Nitrosodimethylamine <sup>C</sup>	0	--	--	na	8.1E+01	--	--	na	8.1E+01	--	--	--	--	--	--	--	--	--	--	na	8.1E+01
N-Nitrosodiphenylamine <sup>C</sup>	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
N-Nitrosodi-n-propylamine <sup>C</sup>	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB-1016	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1221	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1232	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1242	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1248	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1254	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1260	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB Total <sup>C</sup>	0	--	--	na	1.7E-03	--	--	na	1.7E-03	--	--	--	--	--	--	--	--	--	--	na	1.7E-03

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol <sup>C</sup>	0	7.7E-03	5.9E-03	na	8.2E+01	7.7E-03	5.9E-03	na	8.2E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	na	8.2E+01
Phenol	0	--	--	na	4.6E+06	--	--	na	4.6E+06	--	--	--	--	--	--	--	--	--	--	na	4.6E+06
Pyrene	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity Beta and Photon Activity (mrem/yr)	0	--	--	na	1.5E+01	--	--	na	1.5E+01	--	--	--	--	--	--	--	--	--	--	na	1.5E+01
Strontium-90	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	na	4.0E+00
Tritium	0	--	--	na	8.0E+00	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
Selenium	0	--	--	na	2.0E+04	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	--	--	na	2.0E+04
Silver	0	2.0E+01	5.0E+00	na	1.1E+04	2.0E+01	5.0E+00	na	1.1E+04	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	1.1E+04
Sulfate	0	4.4E+00	--	na	--	4.4E+00	--	na	--	--	--	--	--	--	--	--	--	4.4E+00	--	na	--
1,1,2,2-Tetrachloroethane <sup>C</sup>	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Tetrachloroethylene <sup>C</sup>	0	--	--	na	1.1E+02	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	1.1E+02
Thallium	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Toluene	0	--	--	na	6.3E+00	--	--	na	6.3E+00	--	--	--	--	--	--	--	--	--	--	na	6.3E+00
Total dissolved solids	0	--	--	na	2.0E+05	--	--	na	2.0E+05	--	--	--	--	--	--	--	--	--	--	na	2.0E+05
Toxaphene <sup>C</sup>	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Tributyltin	0	7.3E-01	2.0E-04	na	--	7.3E-01	2.0E-04	na	7.5E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	7.5E-03
1,2,4-Trichlorobenzene	0	4.6E-01	6.3E-02	na	--	4.6E-01	6.3E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	6.3E-02	na	--
1,1,2-Trichloroethane <sup>C</sup>	0	--	--	na	9.4E+02	--	--	na	9.4E+02	--	--	--	--	--	--	--	--	--	--	na	9.4E+02
Trichloroethylene <sup>C</sup>	0	--	--	na	4.2E+02	--	--	na	4.2E+02	--	--	--	--	--	--	--	--	--	--	na	4.2E+02
2,4,6-Trichlorophenol <sup>C</sup>	0	--	--	na	8.1E+02	--	--	na	8.1E+02	--	--	--	--	--	--	--	--	--	--	na	8.1E+02
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	6.5E+01	--	--	na	6.5E+01	--	--	--	--	--	--	--	--	--	--	na	6.5E+01
Vinyl Chloride <sup>C</sup>	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Zinc	0	--	--	na	6.1E+01	--	--	na	6.1E+01	--	--	--	--	--	--	--	--	--	--	na	6.1E+01
	0	1.3E+02	1.3E+02	na	6.9E+04	1.3E+02	1.3E+02	na	6.9E+04	--	--	--	--	--	--	--	--	1.3E+02	1.3E+02	na	6.9E+04

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.  
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic  
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	4.3E+03
Arsenic	9.0E+01
Barium	na
Cadmium	7.6E-01
Chromium III	5.0E+01
Chromium VI	6.4E+00
Copper	6.1E+00
Iron	na
Lead	9.7E+00
Manganese	na
Mercury	5.1E-02
Nickel	1.4E+01
Selenium	3.0E+00
Silver	1.8E+00
Zinc	5.3E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

## Motiva Fairfax Terminal

VA0002283

Outfall 002

Date	Hardness mg/L CaCO3	pH
09-Jan-2002	82.2	
05-Feb-2002	74	
11-Mar-2002	58	
10-Apr-2002	58	
10-May-2002	59	
10-Jun-2002	107	
09-Jul-2002	70	
08-Aug-2002	65	
09-Sep-2002	77	
10-Oct-2002	62	
08-Nov-2002	64	
10-Dec-2002	73	
10-Jan-2003	62	
07-Feb-2003	61	
10-Mar-2003	42	
09-Apr-2003	100	
11-Apr-2005	130	7.19
12-May-2003	60	6.74
09-Jul-2003	60	6.64
07-Oct-2003	90	7.31
06-Jan-2004	55	6.93
07-Apr-2004	650	7.48
12-Oct-2004	160	7.01
10-Jan-2005	130	6.87
07-Jul-2005	110	6.47
11-Oct-2005	130	6.28
10-Jan-2006	140	6.27
06-Apr-2006	167	
20-Nov-2006	174	6.65
10-Oct-2006	136	6.88
13-Nov-2006	146	6.65
10-Apr-2007	105.8	
05-Jul-2007	252	7.48
09-Oct-2007	92.3	7.89

Mean: 114.8

90th Percentile: 7.48

1/7/2008 2:49:36 PM

Facility = Motiva Enterprises - Fairfax Terminal Outfall 003

Chemical = Chlorine

Chronic averaging period = 4

WLAa = 19

WLAc = 11

Q.L. = 100

# samples/mo. = 1

# samples/wk. = 1

#### Summary of Statistics:

# observations = 1

Expected Value = 200

Variance = 14400

C.V. = 0.6

97th percentile daily values = 486.683

97th percentile 4 day average = 332.758

97th percentile 30 day average = 241.210

# < Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity

Maximum Daily Limit = 16.0883226245855

Average Weekly limit = 16.0883226245856

Average Monthly Limit = 16.0883226245856

The data are:

200

1/7/2008 4:52:21 PM

Facility = Motiva Enterprises - Fairfax Terminal Outfall 002

Chemical = Zinc

Chronic averaging period = 4

WLAa = 130

WLAc = 130

Q.L. = 26

# samples/mo. = 1

# samples/wk. = 1

#### Summary of Statistics:

# observations = 8

Expected Value = 50

Variance = 900

C.V. = 0.6

97th percentile daily values = 121.670

97th percentile 4 day average = 83.1895

97th percentile 30 day average = 60.3026

# < Q.L. = 0

Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

50

50

50

50

50

50

50

50

50

## **BTEX and Naphthalene**

The following discussions on the development of BTEX and naphthalene limits are taken from Regulation 9 VAC 25-120-10 et seq., General Virginia Pollution Discharge Elimination System (VPDES) Permit Regulation for Discharges from Petroleum Contaminated Sites and Hydrostatic Tests.

### **Benzene:**

The EPA criteria document for benzene (EPA 440/5-80-018, EPA 1980a) states that benzene may be acutely toxic to freshwater organisms at concentrations as low as 5,300 µg/L. This is an LC50 value for rainbow trout. The document also states that acute toxicity would occur at lower concentrations among more sensitive species. No data were available concerning the chronic toxicity of benzene to sensitive freshwater organisms. The derivation of a "safe level" for benzene was based on the 5,300 µg/L LC50. This value was divided by 10 in order to approximate a level which would not be expected to cause acute toxicity. (The use of an application factor of 10 was recommended by the National Academy of Sciences in the EPA's publication "Water Quality Criteria, 1972" (EPA/R3/73-033). This use of application factors when setting water quality criteria is still considered valid in situations where data are not sufficient to develop criteria according to more recent guidance.) The resulting "non-lethal" concentration of 530 µg/L was divided by an assumed acute to chronic ratio of 10 to arrive at the water quality-based permit limitation of 53 µg/L. (When actual data are not available, EPA, in the Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001) recommends using an acute to chronic ratio of 10). The EPA model permit's technology-based 50 µg/L value is more protective, therefore, it was chosen over the 53 µg/L water quality-based concentration.

### **Ethylbenzene:**

The EPA criteria document for ethylbenzene (EPA 440/5-80-048, EPA 1980b) gives an acute effects concentration of 32,000 µg/L. This is an LC50 for bluegill sunfish. Acute toxicity may occur at lower concentrations if more sensitive species were tested. No definitive data are available on the chronic toxicity of ethylbenzene to freshwater organisms. In order to derive an acceptable level of ethylbenzene for the protection of freshwater organisms the acute value of 32,000 µg/L was divided by 100, using the same assumptions employed above for benzene. The resulting value of 320 µg/L is a calculated chronic toxicity concentration for ethylbenzene.

### **Toluene:**

The EPA criteria document for toluene (EPA 440/5-80-075, EPA 1980c) states that acute toxicity to freshwater organisms occurs at 17,500 µg/L and would occur at lower concentrations if more sensitive organisms were tested. No data are available on the chronic toxicity of toluene to freshwater species. Based on the available data for acute toxicity and dividing by the application factor of 100, the proposed effluent limit for toluene discharged to freshwater is 175 µg/L.

### **Xylene:**

Xylene is not a 307(a) priority pollutant, therefore no criteria document exists for this compound. There are three isomers of xylene (ortho, meta and para) and the general permit limits are established so that the sum of all xylenes is considered in evaluating compliance. The proposed effluent limits are based on a search of the EPA's ECOTOX data base. According to ECOTOX, the lowest freshwater LC50 for xylenes is 3,300 µg/L reported for rainbow trout (Mayer and Ellersieck 1986). Based on the rationale presented earlier for other compounds, this acutely toxic concentration was divided by 10 to account for species that were not tested but which may be more sensitive than rainbow trout. Then, in order to find a concentration that is expected to be safe over chronic exposures, an additional safety factor of 10 was applied to arrive at the proposed effluent limitation of 33 µg/L total xylenes.

### **Naphthalene:**

The EPA criteria document for naphthalene (EPA 440/5-80-059) gives a chronic effect concentration of 620 µg/L with fathead minnows, but it states that effects would occur at lower concentrations if more sensitive freshwater organisms were tested. According to the ECOTOX DATABASE, naphthalene at a concentration of 1,000 µg/L was lethal to 50% of the water fleas (*Daphnia pulex*) tested (Truco et al. 1983). DeGaere and associates (1982) tested the effects of naphthalene on Rainbow Trout and reported an LC50 concentration of 1600 µg/L. Based upon these more recent studies, it is recommended that the effluent limit for naphthalene in freshwater be set at 10 µg/L.

## CHRONIC TEST DATA REVIEW CHECKLIST

Revised October 13, 2004

Referencing:

*Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition, EPA 821-R-02-013, October 2002 (Citations preceded by "F")*

and

*Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Marine and Estuarine Organisms, Third Edition, EPA 821-R-02-014, October 2002 (Citations preceded by "S")*

Permit Number VA0002283      Outfall 002      Permittee Motiva Enterprises – Fairfax Terminal

Test Start Date 03/20/07

Period Reviewed: QT X    SA        AN X    Other:

WET Limit 1.8

Testing Laboratory E.A.Engineering & Sciences

#	CHRONIC DATA PARAMETERS – (Some are organism specific)	X	NO	Manual or Permit Req.
1.	Was the test performed as per schedule?	X		Permit
2.	<b>Was the correct test performed?</b>	X		Permit
3.	<b>Was the correct type of sample collected at each sampling event?</b>	X		Permit
4.	<b>Was a minimum of 3 samples collected?</b>	X		F-8.3.2
5.	Were Ph, temp, Cl of sample checked at sample site (or within 15 minutes of sample retrieval) for each sample?	X		DEQ guidance F-8.5.3
6.	If the samples were collected for off-site toxicity testing, were they held at 0-6° C during collection (composite) or chilled immediately following collection (grab)?	X		F-8.5.2 S-8.5.1
7.	<b>Was each sample packed in ice and chilled to 0-6° C for transport? NOTE: Frozen samples are not valid! NOTE: An exception to this would be for samples that are delivered for same day testing that may not have a chance to cool to this temperature range.</b>	X		F-8.5.7.1 S-8.5.7.1
8.	Were temperature and sample description recorded upon receipt of each sample?	X		S-8.6.1 DEQ guidance
9.	Does the description (visual, obvious scent) of each sample (when received at lab) seem typical for this type of facility?	X		DEQ guidance
10.	<b>Was the test initiated within 36 hours of sample retrieval from sampler?</b> NOTE: In isolated cases, an extension to this holding time can be allowed by DEQ (CO). Documentation of this permission must be presented with the test report and include the supportive data mentioned in 8.5.4 and 8.7.1	X		F-8.5.4 S-8.5.4
11.	<b>Was the last use of the sample within 72 HOURS AFTER FIRST USE (sample age should not exceed 108 hours)?</b>	X		F-8.5.4 S-8.5.4
12.	If filtration was necessary to remove debris or indigenous organisms, was a sieve with $\geq 60 \mu\text{m}$ mesh openings (or larger) used?	N/A		F-8.8.2 S-7.3.4
13.	<b>a. Was the sample DO <math>\geq 4.0</math> mg/l and <math>\leq</math> saturation at 25° C prior to test initiation? (applies to <i>C. dubia</i> and <i>P. promelas</i>)</b> <b>b. Was the sample DO <math>\geq 4.0</math> mg/l and <math>\leq</math> saturation at 25° C and 20 g/kg salinity prior to test initiation? (applies to <i>C. variegatus</i>)</b> <b>c. Was the sample DO <math>\geq 4.0</math> mg/l and <math>\leq</math> saturation at 26° C and 20 g/kg salinity prior to test initiation? (applied to <i>M. bahia</i>)</b>		X	F-8.8.3 S-8.8.4

#	CHRONIC DATA PARAMETERS – (Some are organism specific)	X	NO	Manual or Permit Req.
14.	If item 13. is “NO” for meeting the minimum DO levels for the organism used, was the DO adjusted to the acceptable range (see a., b., and c. above) prior to test initiation?	X		F-8.8.3
15.	If the DO of the sample was greater than saturation at the test temperature, was the sample aerated to reduce it prior to test initiation?	X		F-8.8.3
16.	If the sample had a chlorine residual, was it dechlorinated?	N/A		F-8.8.7 S-8.8.7
17.	Did the permit allow for dechlorination of the sample? (Only if it contains a compliance schedule for a chlorine limit or for dechlorination)	N/A		DEQ guidance
18.	If the sample was dechlorinated, were controls treated with the same amount of dechlorination agent and run with untreated controls? (This determines any adverse effect of the dechlorination agent.)	N/A		F-8.8.7 S-8.8.7
19.	Was each sample pH within the 6.0 - 9.0 range?	X		F-8.8.8 S-8.8.9
20.	If 19. is NO, <b>and</b> if the sample pH was adjusted, were parallel tests, one with an adjusted pH and one without an adjusted pH, run? <b>NOTE: DEQ prefers that the effluent is used “as is”, with regard to pH due to the problems associated with multiple samples.</b>	N/A		F-8.8.8 S-8.8.9
21.	If the pH was adjusted, was it adjusted to pH 7.0 (Freshwater tests) or pH 8.0 (Saltwater tests) by adding 1N NaOH or 1N HCl?	N/A		F-8.8.8 S 8.8.9
22.	<b>Was the age of the organisms in the correct range at test initiation?</b> a. <i>P. promelas</i> and <i>C. variegatus</i> - <24 hours old preferred (0-48 hours old is acceptable if the organisms are all within 24 hours in age of each other) b. <i>C. dubia</i> - <24 hours old, within 8 hours of age of each other? c. <i>M. bahia</i> - 7 days old, within 24 hours of age of each other	X		F-Tbl 11-1 S-Tbl 11-3 S-11.10.2.2 F-Tbl 13-3 S-Tbl 13-3
23.	<b>If the test organisms were obtained from an outside source, was a reference toxicant test run concurrently?</b>	N/A		F-4.7.1 4.7.3 S-4.7.1
24.	If the concurrently run reference toxicant test should fail to meet acceptability criteria, was the reference toxicant test repeated?	N/A		F-4.7.4 S-4.7.4
25.	<b>Was a minimum of 5 test concentrations and 1 control set up using concentrations appropriate for the limit or monitoring endpoint specified in the permit?</b>	X		F-8.10. S-8.10
26.	Was the test chamber size acceptable? a. <i>P. promelas</i> - 500 ml minimum b. <i>C. variegatus</i> - 300-1000 ml c. <i>M. bahia</i> - 400 ml beaker or 8 oz cup (236 ml capacity) d. <i>C. dubia</i> - 30 ml minimum	X		F-Tbl 11-1 S-Tbl 11-3 F-Tbl 13-3 S-Tbl 13-3
27.	Was the sample volume acceptable? a. <i>P. promelas</i> - 250 ml minimum b. <i>C. variegatus</i> - 250-750 ml c. <i>M. bahia</i> - 150 ml d. <i>C. dubia</i> - 15 ml minimum	X		F-Tbl 11-1 S-Tbl 11-3 F-Tbl 13-3 S-Tbl 13-3

#	CHRONIC DATA PARAMETERS – (Some are organism specific)	X	NO	Manual or Permit Req.
28.	Was the minimum number of replicates per concentration represented? a. 4 replicates - <i>P. promelas</i> , <i>C. variegatus</i> b. 8 replicates - <i>M. bahia</i> c. 10 replicates - <i>C. dubia</i>	X		F-Tbl 11-1 S-Tbl 11-3 F-Tbl 13-3 S-Tbl 13-3
29.	Was the minimum number of organisms in each replicate? a. 10 organisms - <i>P. promelas</i> , <i>C. variegatus</i> , b. 5 organisms - <i>M. bahia</i> c. 1 organism - <i>C. dubia</i>	X		F-Tbl 11-1 S-Tbl 11-3 F-Tbl 13-3 S-Tbl 13-3
30.	a. Was the dilution water synthetic moderately hard water or 20% DMW? (applies to freshwater species <i>P. promelas</i> , <i>C. dubia</i> ) b. Was the dilution water synthetic sea water made with deionized water and sea salts adjusted to $20 \pm 2$ ppt, or the same salinity as the receiving water? (applies to salt water species, <i>C. variegatus</i> , <i>M. bahia</i> )	X		F-7.1.1.1 S-14.6.10.2 DEQ guidance
31.	Freshwater - Was the dilution water hardness within the approximate range of 80-100 mg CaCO <sub>3</sub> /L?	X		F-Tables 3 & 4
32.	Freshwater - Was the dilution water alkalinity within the approximate range of 57- 64 mg CaCO <sub>3</sub> /L?	X		F-Tables 3 & 4
33.	Freshwater - Was the dilution water pH within the approximate range of 7.4 – 7.8; or 7.9 – 8.3 or mineral water?	X		F-Tables 3 & 4
34.	a. The average test temperature for tests using <i>P. promelas</i> , <i>C. dubia</i> , or <i>C. variegatus</i> should be $25 \pm 1^\circ \text{C}$ upon initiation and throughout the test. Did the test temperatures deviate by more than $3^\circ \text{C}$ (maximum minus minimum temperature) during the test? b. The average test temperature for tests using <i>M. bahia</i> should be $26 \pm 1^\circ \text{C}$ upon initiation and throughout the test. Did the test temperatures deviate by more than $3^\circ \text{C}$ (maximum minus minimum temperature) during the test?	X		F-4.6.1 S-Table 3
35.	Was the temperature measured daily in one replicate of each concentration?	X		F-4.6.1 S-11.10.7.1.2
NOTE	<i>If surrogate sample chambers were used for probe measurements, they MUST have contained the same number of organisms as the test chambers and have been subject to the same conditions as the test chambers; else, the data are not acceptable. This applies to pH, DO and conductivity readings.</i>			
36.	Was the DO measured daily, at the beginning and end of each 24 hour period, in one replicate of each concentration?	X		F-4.6.1 S-13.10.6.1.1
37.	If the DO dropped to <4.0 mg/l in a test using <i>P. promelas</i> , <i>C. variegatus</i> , or <i>M. bahia</i> , was aeration initiated? (For a test using <i>C. dubia</i> , a low DO sample should be aerated prior to test initiation or renewal, as aeration with the organisms present is impractical.)	N/A		F-8.8.4. S-11.10.4.1
38.	If aeration was necessary (and acceptable), were <b>all</b> test chambers aerated for the duration of the test, and the time at which aeration was initiated recorded? (Not applicable to tests using <i>C. dubia</i> )	N/A		F-8.8.4.2 S-11.10.4.1
39.	If aeration was necessary (and acceptable), was it applied at a maximum rate of 100 bubbles/minute so as not to cause injury to the organisms?	N/A		F-8.8.4.2 S-11.10.4.1

#	CHRONIC DATA PARAMETERS – (Some are organism specific)	X	NO	Manual or Permit Req.
40.	Was pH measured at test initiation and at the end of each 24-hour period in one replicate of each concentration?	X		F-8.8.5 S-11.10.7.1.2
41.	Was the pH measured in the effluent sample each day before new test solutions are made?	X		F-8.8.6 S-11.10.7.1.3
42.	If toxicity may be caused by un-ionized ammonia (or where the ammonia is $\geq 5.0$ mg/l), was total ammonia measured?	N/A		F-8.8.6
43.	a. For a freshwater test, was conductivity measured at the beginning of each 24-hour period in the 100% sample and the control? (applies to freshwater species <i>P. promelas</i> , <i>C. dubia</i> ) <b>NOTE: It is recommended that conductivity is measured in one replicate of each dilution at the beginning of each 24-hour period.</b> b. For a saltwater test, was the salinity measured at the end of each 24-hour period in one replicate of each concentration? (applies to salt water species, <i>C. variegatus</i> , <i>M. bahia</i> )	X		F-8.8.5 DEQ guidance S-11.10.7.1.2
44.	For both freshwater and saltwater tests, was the alkalinity measured in 100% effluent and the control at test initiation, and for each new sample? (For saltwater tests, the effluent alkalinity should be measured prior to adjustment with salts.)	X		F-8.8.5.1 S-8.8.5.1
45.	For both freshwater and saltwater tests, was the hardness measured in 100% effluent and the control at test initiation, and for each new sample? (For saltwater tests, the effluent hardness should be measured prior to adjustment with salts.)	X		F-8.8.5.1 S-8.8.5.1
46.	a. For a test using <i>Mysidopsis bahia</i> , were the mysids fed <i>Artemia</i> nauplii (at a rate of 75/mysid) twice daily? b. For a test using <i>Pimephales promelas</i> , were the larvae fed 0.15 ml concentrated <i>Artemia</i> nauplii a minimum of twice daily? c. For a test using <i>Cyprinodon variegatus</i> , were the larvae fed <i>Artemia</i> nauplii once per day at a rate of 0.1 g (wet weight) for days 0-2, and 0.15 g (wet weight) for days 3-6? d. For a test using <i>Ceriodaphnia dubia</i> , were the organisms fed 0.1 ml YCT and 0.1 ml algae per day after renewal?	X		F-11.10.5.1  S-11.10.5 F-13.10.5.1
47.	Was the sample data for the renewal days consistent with the data for the first use of that sample?	X		DEQ guidance
48.	Was the daily photoperiod 16 hours light/8 hours dark?	X		F-13.10.3.1 S-11.10.3
49.	Were the surviving organisms counted daily in all test chambers?	X		F-11.10.6.2.1 S-11.10.7.2.1
50.	Were the number of young produced recorded daily for the <i>C. dubia</i> test?	X		F-13.10.6.2.3
51.	Was the occurrence of males present noted in the <i>C. dubia</i> test? (Tests with no males noted may be indicative of no males present)	X		F-13.10.9.3
52.	<b>Were individual treatments with males (1 or 2 replicates) and blocked rows containing <math>\geq 50\%</math> males (3 replicates or more) excluded from data analysis for the reproduction endpoint? (The males are used for survival analysis)</b>	X		<b>F-13.13.1.4</b>
53.	Were the daily renewals of chronic test solutions performed no earlier or later than subsequent $24 \pm 2$ hour periods from test initiation?	X		DEQ guidance

#	CHRONIC DATA PARAMETERS – (Some are organism specific)	X	NO	Manual or Permit Req.
54.	<p>a. For tests using <i>P. promelas</i>, <i>C. variegatus</i>, or <i>M. bahia</i>, was the test terminated 7 days (this is interpreted as 7 24-hour periods) and within <math>\pm 1</math> hour of the time of day at which it was initiated?</p> <p>b. For tests using <i>C. dubia</i>, was the test terminated when 60% or more of the surviving females in the controls had produced their third brood within 8 days?</p>	X		F-Table 1 and DEQ guidance S-11.10.9.1 F-13.10.9.1
55.	Was the percent survival in each concentration recorded at the end of the test?	X		DEQ guidance
56.	Was the percent survival in the controls $\geq 80\%$ ?	X		F-13.12.1 F-11.12.1 S-11.12.1 S-14.12.1
57.	<p>Did the test meet the additional acceptability criteria?</p> <p>a. <i>P. promelas</i> - For tests initiated with larvae <math>\leq 24</math> hours old, was the average dry weight of the control larvae surviving at the end of the test <math>\geq 0.25</math> mg?</p> <p>b. <i>C. variegatus</i> - For tests initiated with larvae <math>\leq 24</math> hours old, was the average dry weight of control larvae <math>\geq 0.60</math> mg (unpreserved), or <math>\geq 0.50</math> mg (preserved)?</p> <p>c. <i>M. bahia</i> - Was the average weight of the controls <math>\geq 0.20</math> mg?</p> <p>d. <i>C. dubia</i> - Did reproduction in the controls average 15 or more young per surviving female? NOTE: Fourth brood neonates should not be counted. In addition to these test acceptability criteria, if fewer than eight replicates in the control remain after excluding males and blocks with 50% or more surviving organisms identified as males, the test is invalid and must be repeated with newly collected samples.</p>	X		F-11.12.1 S-11.12.1  S-14.12.1 F-13.2.1 13.13.1.4
58.	Were the data Arcsin transformed prior to statistical analysis ( <i>M. bahia</i> , <i>C. variegatus</i> , <i>P. promelas</i> – survival)?	X		S-Figure 5
59.	Was the NOEC correctly determined using the appropriate statistical method?	X		F-9.1
60.	<p>Was the PMSD for the sublethal endpoint within upper bounds? (applicable for tests performed after 12/1/02)</p> <p>a. <i>P. promelas</i> growth - 30%</p> <p>b. <i>C. dubia</i> reproduction - 47%</p> <p>c. <i>M. bahia</i> growth - 37%</p> <p>If the PMSD was greater than the criterion but significant reduction identified at the IWC then the test is acceptable (A bold item?)</p>	X		F,S-10.2.8
61.	If the PMSD exceeded the upper bound and no significant reduction was identified at the IWC, was the test repeated?	N/A		F,S-10.2.8.2.4.2
62.	Did the test result in a calculable NOEC (Result reported as “<” is not acceptable. Lower dilutions should have been added or the test rerun to determine the result.)	X		DEQ guidance
63.	Was the IC <sub>25</sub> reported for the test?	X		F-9.1
64.	Was the LC <sub>50</sub> at 48 hours reported for the test?	X		DEQ guidance

Items in bold type (and shaded) are significant in that if they are answered "NO", the test is automatically invalidated and must be repeated to fulfill permit TMP requirements. Bold type items are numbers 2, 3, 4, 7, 10, 11, 14, 22, 23, 25, 34, 35, 52, 54, 56, 57, 60 and 61.

### RESPONSE GUIDE

1. Yes	21. Yes; NA	41. Yes
2. Yes	22. Yes	42. Yes; NA
3. Yes	23. Yes; NA	43. Yes
4. Yes	24. Yes; NA	44. Yes
5. Yes, preferably	25. Yes	45. Yes
6. Yes	26. Yes	46. Yes
7. Yes	27. Yes	47. Yes
8. Yes, preferably	28. Yes	48. Yes
9. Yes, preferably; NA	29. Yes	49. Yes
10. Yes, unless granted variance	30. Yes	50. Yes
11. Yes, unless granted variance	31. Yes	51. Yes; NA
12. Yes, or NA	32. Yes	52. Yes
13. Yes	33. Yes	53. Yes, preferably
14. If 13. is "No", then Yes; NA	34. No	54. Yes
15. Yes; No; NA	35. Yes	55. Yes
16. Yes; No; NA	36. Yes	56. Yes
17. If 16. is "Yes", then Yes	37. Yes; NA	57. Yes
18. If 16. is "Yes", then Yes	38. If 37. is "Yes", then Yes; NA	58. Yes
19. Yes; No	39. If 37. is "Yes", then Yes; NA	59. Yes
20. Yes; NA	40. Yes	60. Yes
		61. Yes
		62-64. Yes

### RESULTS

ACCEPTABLE	NOT ACCEPTABLE
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**COMMENTS:** The Chronic test met the decision criteria and is deemed valid. The NOEC was 14 % resulting in a TUC 7.14. This exceeds the WET limit of 1.8 TUC.

Reviewed by Jim Olson – 04/18/07

**MEMORANDUM**  
**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**Northern Virginia Regional Office**

13901 Crown Ct.

Woodbridge, VA 22193

(703) 583-3840

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**SUBJECT:** TOXICS MANAGEMENT PROGRAM DATA REVIEW  
Motiva Enterprise - Fairfax Terminal (VA0002283)  
**REVIEWER:** Jim Olson  
**DATE:** 04/18/07  
**COPIES:** TMP file, Tom Faha

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**PREVIOUS REVIEW:** July 27, 2005

**DATA REVIEWED:** 04/18/07

This review covers the chronic whole effluent toxicity (WET) test conducted March 20, 2007 for Outfall 002. The test was performed on *C. dubia* using 24-hour composite samples of final effluent collected from the outfall.

**DISCUSSIONS:**

The results of the chronic toxicity test along with the results of all previous toxicity tests conducted since 1998 on effluent samples collected from Outfall 002 are summarized in Table 2.

Outfall 002 has a WET limit of 1.8 TUC maximum. The whole effluent toxicity of the samples was determined with a static daily renewal, 3-brood survival and reproduction chronic toxicity test using *C. dubia* as the test species. Statistical analysis of the test results yielded a No Observed Effect Concentration (NOEC) of 14%, equal to 7.1 TUC, thus met the WET limit of 1.8 TUC specified in the permit.

The test results indicate that the effluent samples from Outfall 002 exhibited chronic toxicity to *C. dubia*.

**CONCLUSION:**

The chronic toxicity test is valid and the results acceptable. The effluent from Outfall 002 meets and is in compliance with the WET limit of 1.8 TUC maximum.

## FACILITY INFORMATION

**FACILITY:** Motiva Enterprise Fairfax Terminal

**LOCATION:** 3800 Pickett Road  
Fairfax, VA 22031

**VPDES#:** VA0002283

**TYPE OF FACILITY:** Industrial, major

**REGION/PERMIT WRITER:** NVRO/ Alison Thompson

**PERMIT EFFECTIVE DATE:** April 16, 2003

**SIC CODE/DESCRIPTION:** 5171/Petroleum Terminal Wholesale

**TREATMENT:** Outfall 001

Storm water runoff: oil/water separation; retention pond.

Outfall 002

Groundwater remediation: oil/water separation; air stripping; carbon adsorption.

**OUTFALLS/FLOWS (MGD):** Outfall 001: 673 gpm avg. and 1122 gpm max.

Outfall 002: 50 gpm avg. and 115 gpm max.

**RECEIVING STREAM/7Q10/IWC:**

Crook Branch Creek; Potomac River Basin and Subbasin; Section 7; Class III; Special Standards b.

7Q10: 0.0 MGD

IWC: 100% (@ outfall 002)

**TMP EFFECTIVE DATE:** February 17, 1993

**TMP REQUIREMENTS:**

Biological Monitoring

- (a) Outfall 001: Annual acute toxicity tests using a grab sample of final effluent from Outfall 001. The acute tests shall be 48-hour static tests using *Ceriodaphnia dubia*. Endpoint is NOAEC.
- (b) Outfall 002: Quarterly WET limit = 1.8 TUc. The chronic tests shall be of static renewal, 3-brood survival and reproduction type using *Ceriodaphnia dubia* based on 24-hour flow proportional composite samples of final effluent from Outfall 002.

**TEST LABORATORY :** EA Engineering, Science and Technology, Inc

## **BIOMONITORING RESULTS**

Motiva Enterprise Fairfax Terminal VPDES VA0002283

Table 1. Summary of Toxicity Test Results for Outfall 001.

TEST DATE	TEST TYPE/ORGANISM	LC <sub>50</sub> (%)	NOAEC %	% SURV	TUA	LAB	REMARKS
06/17/98	Acute C. dubia	>100		100		EA	1st annual
07/08/99	Acute C. dubia	>100		100		EA	2nd annual
07/06/00	Acute C. dubia	>100		100		EA	3rd annual
5/25/01	Acute C. dubia	>100		100		EA	4th annual
05/23/02	Acute C. dubia	>100		100		EA	5th annual
05/02/03	Acute C. dubia	>100	100	100	1	EA	1st annual
08/03/04	Acute C. dubia	>100	100	95	1	EA	2nd annual
6/13/06	Acute C. dubia	>100	100	100	1	EA	
11/30/06	Acute C. dubia	>100	100	100	1	EA	
2/8/07	Acute C. dubia	>100	100	100	1	EA	

Table 2. Summary of Toxicity Test Results for Outfall 002.

TEST DATE	TEST TYPE /ORGANISM	48-h LC <sub>50</sub> (%)	IC <sub>25</sub> (%)	NOEC (%)	% SURV	TUc	LAB	Remark
9/24/98	Chronic <i>C. dubia</i>			<b>Invalid</b>			EA	
12/01/98	Chronic <i>C. dubia</i>			<b>Invalid</b>			EA	
02/02/99	Chronic <i>C. dubia</i>			100 SR	100	1	EA	
06/02/99	Chronic <i>C. dubia</i>			100 SR	100	1	EA	
09/27/99	Chronic <i>C. dubia</i>			100 SR	100	1	EA	
11/30/99	Chronic <i>C. dubia</i>				100		EA	Control failed
12/16/99	Chronic <i>C. dubia</i>			100 SR	100	1	EA	
02/22/00	Chronic <i>C. dubia</i>			100 SR	100	1	EA	
05/18/00	Chronic <i>C. dubia</i>			78 SR	90	1.3	EA	
8/08/00	Chronic <i>C. dubia</i>			100 SR	100	1	EA	
11/14/00	Chronic <i>C. dubia</i>			100 SR	100	1	EA	
02/20/01	Chronic <i>C. dubia</i>	>100	>100	100 SR	89	1	EA	
05/22/01	Chronic <i>C. dubia</i>	>100	>100	100 SR	100	1	EA	
08/23/01	Chronic <i>C. dubia</i>	>100	83	100 S 56 R	80	1.79	EA	
11/27/01	Chronic <i>C. dubia</i>	>100	>100	100 SR	100	1	EA	
04/16/02	Chronic <i>C. dubia</i>	>100	>100	100 SR	90	1	CBI	
06/04/02	Chronic <i>C. dubia</i>	>100	>100	100 SR	80	1	CBI	
08/08/02	Chronic <i>C. dubia</i>	>100	>100	100 S 78 R	90	1.3	EA	
11/19/22	Chronic <i>C. dubia</i>	>100	>100	100 SR	100	1	EA	
02/20/03	Chronic <i>C. dubia</i>	>100	>100	100 SR	100	1	EA	
05/29/03	Chronic <i>C. dubia</i>	>100	>100	100 SR	100	1	EA	1st quarterly
08/21/03	Chronic <i>C. dubia</i>	>100	>100	100 S 78 R	100	1.3	EA	2nd quarterly
11/18/03	Chronic <i>C. dubia</i>	>100	>100	100 SR	100	1	EA	3rd quarterly
02/19/04	Chronic <i>C. dubia</i>	>100	>100	100 SR	100	1	EA	4th quarterly
05/18/04	Chronic <i>C. dubia</i>	>100	>100	100 SR	90	1	EA	5th quarterly
08/10/04	Chronic <i>C. dubia</i>	>100	>100	100 SR	100	1	EA	6th quarterly
11/30/04	Chronic <i>C. dubia</i>	>100	>100	100 SR	100	1	EA	7th quarterly
03/01/05	Chronic <i>C. dubia</i>	>100	>100	100 SR	100	1	EA	8th quarterly
*06/16/05	Chronic <i>C. dubia</i>	>100	>100	100 SR	100	1	EA	9th quarterly
7/11/06	Chronic <i>C. dubia</i>	>100	>100			1	EA	
10/10/06	Chronic <i>C. dubia</i>	>100		<b>28</b>	100	3.6	EA	
03/20/2007	Chronic <i>C. dubia</i>	>100	73.8	<b>14R</b>	100	7.1	EA	
6/19/07	Chronic <i>C. dubia</i>	>100	>100	78		1.3	EA	

## FOOTNOTES:

\* Test included in the review.

A **boldfaced** LC<sub>50</sub> or NOEC value indicates that the test failed the criteria or the WET limit.

LC50 based on observation at the end of 48 hours.

## ABBREVIATIONS:

S - Survival; G - Growth; R - Reproduction

% SURV - Percent survival in 100% effluent

ESE - Environmental Science &amp; Engineering, Inc.

EA - EA, Engineering, Science and Technology, Inc.

CBI - Coastal Bioanalysts, Inc.

Citizens may comment on the proposed reissuance of a permit that allows the release of stormwater and treated groundwater into a water body in Fairfax County, Virginia

PUBLIC COMMENT PERIOD: *TBD*, 2008 to 5:00 p.m. on *TBD*, 2008

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Industrial

Owners or operators of industrial facilities that discharge or propose to discharge stormwater and treated groundwater into the streams, rivers or bays of Virginia from a point source must apply for this permit. In general, point sources are fixed sources of pollution such as pipes, ditches or channels. The applicant must submit the application to the Department of Environmental Quality, under the authority of the State Water Control Board.

PURPOSE OF NOTICE: To invite the public to comment on the draft permit.

NAME, ADDRESS AND PERMIT NUMBER OF APPLICANT: Motiva Enterprises LLC Fairfax Distribution Terminal  
3800 Pickett Road, Fairfax, VA 22031  
VA0002283

NAME AND ADDRESS OF FACILITY: Motiva Enterprises LLC Fairfax Distribution Terminal  
3800 Pickett Road, Fairfax, VA 22031

Project description: Motiva Enterprises LLC has applied for a reissuance of a permit for the Fairfax Distribution Terminal in Fairfax County, Virginia. The applicant proposes to release stormwater and treated groundwater at a rate of 0.106 Million Gallons per Day into the Crook Branch in Fairfax County that is in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The sludge produced will be disposed of offsite by a contractor. The permit will limit the following pollutants to amounts that protect water quality: pH, TPH, BTEX, Naphthalene, Zinc, Copper, Hardness, Chlorine and WET Limit.

How a decision is made: After public comments have been considered and addressed by the permit or other means, DEQ will make the final decision unless there is a public hearing. DEQ may hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the proposed permit. If there is a public hearing, the State Water Control Board will make the final decision.

HOW TO COMMENT: DEQ accepts comments by e-mail, fax or postal mail. All comments must be in writing and be received by DEQ during the comment period. The public also may request a public hearing.

WRITTEN COMMENTS MUST INCLUDE:

1. The names, mailing addresses and telephone numbers of the person commenting and of all people represented by the citizen.
2. If a public hearing is requested, the reason for holding a hearing, including associated concerns.
3. A brief, informal statement regarding the extent of the interest of the person commenting, including how the operation of the facility or activity affects the citizen.

TO REVIEW THE DRAFT PERMIT AND APPLICATION: The public may review the documents at the DEQ-Northern Regional Office every work day by appointment.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION:

Name: Douglas Frasier

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3873 E-mail: [ddfrasier@deq.virginia.gov](mailto:ddfrasier@deq.virginia.gov) Fax: (703) 583-3841

Revised 2/2003

**State "Transmittal Checklist" to Assist in Targeting  
Municipal and Industrial Individual NPDES Draft Permits for Review**

**Part I. State Draft Permit Submission Checklist**

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Motiva Enterprises LLC Fairfax Distribution Terminal
NPDES Permit Number:	VA0002283
Permit Writer Name:	Douglas Frasier
Date:	11 January 2008

**Major** [ ]

**Minor** [X]

**Industrial** [X]

**Municipal** [ ]

**I.A. Draft Permit Package Submittal Includes:**

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?			X
8. Whole Effluent Toxicity Test summary and analysis?	X		
9. Permit Rating Sheet for new or modified industrial facilities?	X		

**I.B. Permit/Facility Characteristics**

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet <b>or</b> permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet <b>or</b> permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?		X	
a. Has a TMDL been developed and approved by EPA for the impaired water?			X
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?			X
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?	X		

<b>I.B. Permit/Facility Characteristics – cont.</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?	X		
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

## Part II. NPDES Draft Permit Checklist

### Region III NPDES Permit Quality Review Checklist – For Non-Municipals (To be completed and included in the record for all non-POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet <b>or</b> permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ)	Yes	No	N/A
1. Is the facility subject to a national effluent limitations guideline (ELG)?		X	
a. If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source?			X
b. If no, does the record indicate that a technology-based analysis based on Best Professional Judgement (BPJ) was used for all pollutants of concern discharged at treatable concentrations?	X		
2. For all limits developed based on BPJ, does the record indicate that the limits are consistent with the criteria established at 40 CFR 125.3(d)?	X		
3. Does the fact sheet adequately document the calculations used to develop both ELG and /or BPJ technology-based effluent limits?	X		
4. For all limits that are based on production or flow, does the record indicate that the calculations are based on a “reasonable measure of ACTUAL production” for the facility (not design)?			X
5. Does the permit contain “tiered” limits that reflect projected increases in production or flow?		X	
a. If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained?			X
6. Are technology-based permit limits expressed in appropriate units of measure (e.g., concentration, mass, SU)?	X		
7. Are all technology-based limits expressed in terms of both maximum daily, weekly average, and/or monthly average limits?		X	
8. Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ?		X	

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the record indicate that any WQBELs were derived from a completed and EPA approved TMDL?			X
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?			X

<b>II.D. Water Quality-Based Effluent Limits – cont.</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	X		
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations where data are available)?			X
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?	X		
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short-term (e.g., maximum daily, weekly average, instantaneous) effluent limits established?		X	
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the fact sheet indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	X		

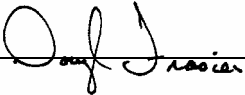
<b>II.E. Monitoring and Reporting Requirements</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1. Does the permit require at least annual monitoring for all limited parameters?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require testing for Whole Effluent Toxicity in accordance with the State’s standard practices?	X		

<b>II.F. Special Conditions</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1. Does the permit require development and implementation of a Best Management Practices (BMP) plan or site-specific BMPs?	X		
a. If yes, does the permit adequately incorporate and require compliance with the BMPs?	X		
2. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
3. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?			X

II.G. Standard Conditions		Yes	No	N/A
1. Does the <b>permit</b> contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?		X		
<b>List of Standard Conditions – 40 CFR 122.41</b>				
Duty to comply	Property rights	Reporting Requirements		
Duty to reapply	Duty to provide information	Planned change		
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance		
not a defense	Monitoring and records	Transfers		
Duty to mitigate	Signatory requirement	Monitoring reports		
Proper O & M	Bypass	Compliance schedules		
Permit actions	Upset	24-Hour reporting		
		Other non-compliance		
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for existing non-municipal dischargers regarding pollutant notification levels [40 CFR 122.42(a)]?		X		

**Part III. Signature Page**

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Douglas Frasier</u>
Title	<u>Environmental Specialist II</u>
Signature	<u></u>
Date	<u>11 January 2008</u>